Reviewed by: J Martinez
Def to RCRA 9/28/92

EBASCO

ARCS II PROGRAM

Remedial Planning Activities at Selected Uncontrolled Hazardous Substance Disposal Sites Within EPA Region II (NY, NJ, PR, VI)

EPA Contract 68-W8-0110

EBASCO

An ENSERCH® Engineering and Construction Company

EPA WORK ASSIGNMENT NUMBER: 041-2Z00
EPA CONTRACT NUMBER: 68-W8-0110
EBASCO SERVICES INCORPORATED

ARCS II PROGRAM

FINAL DRAFT
ENVIRONMENTAL PRIORITIES INITIATIVE/ PRELIMINARY ASSESSMENT (EPI-PA)
AMES RUBBER CORPORATION
WANTAGE
SUSSEX COUNTY, NEW JERSEY
CERCLIS NO.: NJD000818518

SEPTEMBER 1992

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E1817.LYN

SITE SUMMARY AND RECOMMENDATION

The Ames Rubber Corporation (Ames Rubber) site (EPAID Number: NJD000818518) is located on Route 565 in the Township of Wantage, Sussex County, New Jersey, approximately 0.5 mile north of Route 23 (Figure 1). The site is located in a rural, agricultural area of northwestern New Jersey and is not fenced. The site, approximately 10 acres in size, contains two buildings, Building # 2 and Building # 3. Building # 2 is used for facility manufacturing and Building # 3 (west of Building # 2) is used for personnel training and product development. The site terrain consists of rolling hills, and from Building # 2 to Building # 3, there is an approximate 12-foot drop westward. To the east, south, and west of the site are marshes and swamplands. State highway 565 and more wetland area lie to the north. The nearest residence is located 0.3 mile east of the site. Figure 2 depicts a detailed site sketch.

The Ames Rubber Corporation has owned the site and operated there since 1973 to the present. Previously, the Building # 3 portion of the site was vacant. The Building # 2 portion of the site was owned and operated since 1960 by a gunsmith shop. Information on wastes managed was unavailable. At the site, Ames manufactures automobile suspension boots and custom elastomeric-coated metal products for the office and copier industries. In its operations, Ames Rubber uses various solvents, including 1,1,1-trichloroethane, methylene chloride, and methyl ethyl ketone. On-site wastes are generated from the manufacturing of elastomerically-coated metal roller parts for the copier industry. Operations consist of spray painting and cleaning roller parts. Solid waste management units (SWMUs) consist of drum storage areas, former drum storage areas, garbage collection roll-off dumpsters and air emission control devices. Access to the only hazardous waste drum storage area is blocked by a locked fence. The site is well vegetated, with trees and bushes surrounding the eastern and southern edges, and the area north across Route 565. The site is paved outdoors. Both buildings on-site are not connected to any wastewater treatment plant and have septic sewage treatment systems. No air releases have been documented. The facility holds numerous air permits for its spray booth and future dust collection operations. It is unknown if any Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Resource Conservation and Recovery Act (RCRA) sites exist within a one-mile radius of the site.

SWMUs at the site include the Hazardous Waste Roll-Off Dumpster (SWMU 1), Thermal Oxidizers (SWMU 2), Hazardous Waste Drum Storage Area (SWMU 3), MEK Satellite Accumulation Area (SWMU 4), Methylene Chloride Satellite Accumulation Area (SWMU 5), 1,1,1-Trichloroethane Satellite Accumulation Area (SWMU 6), Former Drum Storage Areas (SWMU 7), and Former Floor Drains (SWMU 8). The Hazardous Waste Roll-Off Dumpster (SWMU 1) has a capacity of approximately 60 cubic yards. Wastes managed are methyl ethyl ketone (MEK), methylene chloride, and 1,1,1-trichloroethane. MEK wastes from paint spray booth operations are emitted from the Thermal Oxidizers (SWMU 2). Spent solvent wastes methylene chloride, MEK, and 1,1,1-trichloroethane are contained in drums at the Hazardous Waste Drum Storage Area (SWMU 3). The area has a capacity of approximately 300 55-gallon drums. The MEK Satellite Accumulation Area (SWMU 4) handles approximately 10 55-gallon drums of spent MEK. Two drums of spent methylene chloride are generated at the Methylene Chloride Satellite Accumulation Area (SWMU 5). The 1,1,1-Trichloroethane Satellite Accumulation Area (SWMU 6) has a capacity of three drums of spent solvent 1,1,1-

trichloroethane. The Former Drum Storage Areas (SWMU 7) and Former Floor Drains (SWMU 8) are no longer in existence.

On or about July 12, 1984, Ames Rubber sampled one of the site's two drinking water supply wells. The results have indicated that the groundwater under the site was contaminated with pollutants as defined by New Jersey law. The presence of 1,1-dichloroethane, 1,1-dichloroethylene and 1,1,1-trichloroethane was found at a depth of 300 feet in one well. The other well contained 1,1-dichloroethane, 1,1-dichloroethylene, and 1,1,1-trichloroethane at a depth of 96 feet. This discharge was a violation of the New Jersey Water Pollution Control Act. Sample analyses were also performed on a private drinking water well approximately 150 feet northeast of the site. The contaminant 1,1,1-trichloroethane was discovered. Background levels and Environmental Cleanup Responsibility Act (ECRA) levels for these contaminants were unknown. Maximum Contaminant Levels (MCLs) have not been set for these contaminants. As a result of sampling performed at the private well northeast of the site, Ames Rubber had provided bottled water to the household served by the private well as an alternate drinking water source. The house has since been demolished and the residents have relocated. A Phase I investigation including sampling was conducted by Ames Rubber, which resulted in a report submitted to the state on August 1, 1985. Ames Rubber agreed to conduct a remedial investigation and feasibility study (RI/FS) to identify remedial action alternatives for the site. Currently, Ames Rubber is drafting a detailed remedial action plan to the New Jersey Department of Environmental Protection and Energy (NJDEPE) for approval. Monitoring wells are located to the north of Building # 2 (one) and south of Building # 3 (one). These wells were installed as part of a groundwater remediation plan and treatment system currently being required by NJDEPE. According to facility personnel, it is believed that the groundwater contamination could have been caused by the Former Drum Storage Areas (SWMU 7), which may have released the solvent wastes into the groundwater.

Glacial deposits cover bedrock in the area under the site and are tapped by wells. The uppermost deposit beneath the site is of Wisconsinan age, and consists of stratified sand and gravel deposited at the ice margin by meltwater streams. Immediately east of the facility is the margin between these stratified deposits and a discontinuous fill deposit. This consists of unstratified and unsorted boulders and gravel in a matrix of sand, silt, and clay, deposited directly from ice. The Wisconsinan glacial deposits may be underlain by older Jerseyan and Illinoian glacial material. The thickness of glacial deposits varies considerably in the area; the nearest measurement is approximately 0.5 mile west of the facility, where the depth to bedrock is 91 feet.

The Martinsburg hornfels is the source aquifer for 12 wells in Wantage Township. This dark gray, fine-grained metamorphic rock is the result of metamorphism of the Martinsburg Shale by the Beemerville Nepheline Syenite. The hornfels has no primary porosity; groundwater is found in vertical cracks and crevices and yields 5.5 gallons per minute.

Fifteen domestic wells in the region are completed in the Kittatinny Formation, which consists of the Leithsville, Allentown, and Beekmantown rocks. The wells draw on groundwater that occurs in fractures and solution cavities within the limestone and dolomite. Such water is found both under unconfined and semi-artesian conditions. The depth to groundwater is approximately 96 feet at the site. The direction of groundwater flow is to the northeast, toward the Wallkill River. There are approximately 13,577 people residing within a four-mile radius of the site

which are served by drinking water wells. Approximately 615 people reside within a one-mile radius of the site.

The site surface water flows overland to the east to the Papakating Creek and eventually drains to the Wallkill River, 0.3 mile east from the site. The flow rate of the river is unknown. The Wallkill River is used for fishing. Surface water is not used for drinking purposes within 15 miles downstream of the potential point of entry, as drinking water comes from wells. The site lies outside the 500-year flood plain. Total acreage of wetlands within 15 miles downstream of the potential point of entry is unknown. Approximately 100 acres of wetlands are within one-half mile of the site.

The nearest residence is 0.3 mile to the east of the site on Route 565. On-site workers at Ames Rubber total approximately 115 employees. Total daytime population within a four-mile radius of the site is 13,577. No school/day care facility is within 200 feet of the site property. Based on the 1980 census figures and site reconnaissance house count estimates, there are approximately 500 people residing within a one-mile radius of the site. Wetland sensitive environments exist approximately 200 feet from the site. No recreational parks are adjacent to the site.

Hazardous wastes generated on-site include liquid solvent wastes methyl ethyl ketone (MEK), 1,1,1-trichloroethane, and methylene chloride. Facility wastes contaminated with liquid solvents are also generated and stored on-site. Also, hazardous MEK air emissions are generated from site spray booth operations. As previously stated, Ames Rubber sampled the facility's two potable water wells in 1984. Samples were found to contain the following contamination levels:

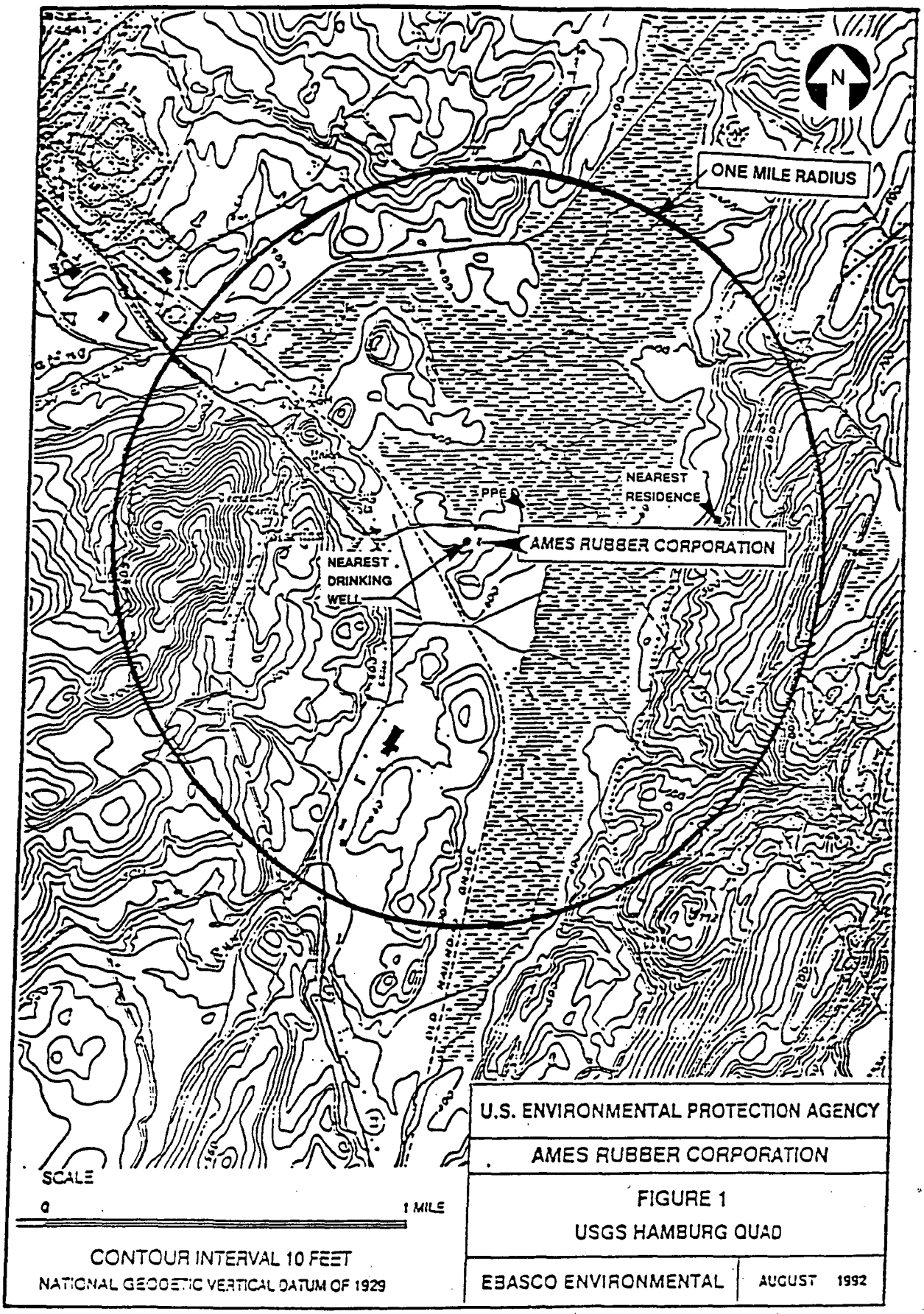
Well # 1	1,1-dichloroethane	44*
(exact location	1,1-dichloroethylene	65
unknown,	1,1,1-trichloroethane	580
depth = 300 feet)		
Well # 2	1,1-dichloroethane	34
(exact location	1,1-dichloroethylene	98
unknown,	1,1,1-trichloroethane	100
depth = 96 feet)		

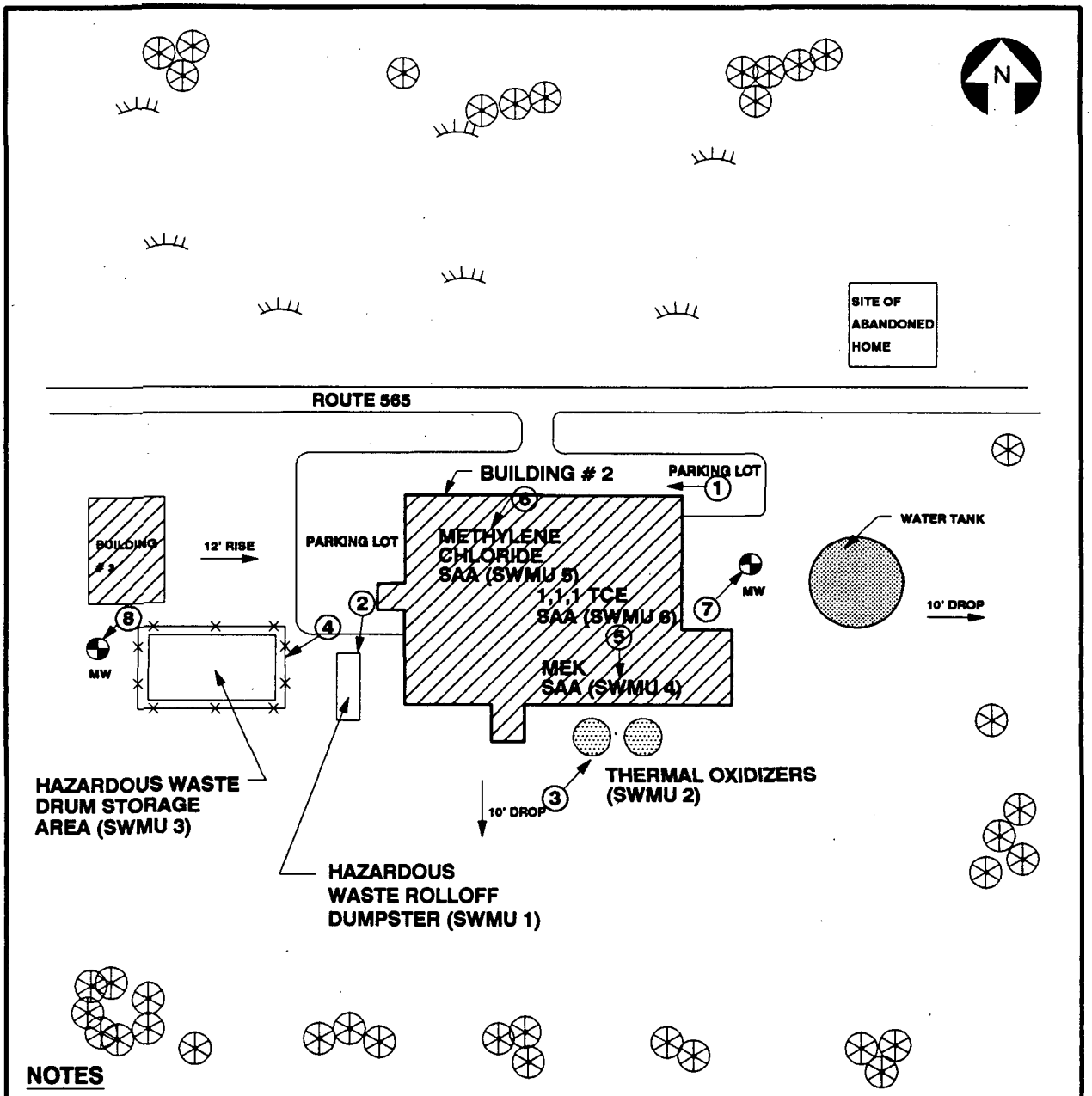
* Concentration in parts per billion.

A non-sampling site reconnaissance was performed on July 28, 1992. Waste source areas observed were in good condition and no evidence of contaminant migration to the site's surrounding wetlands was observed. Monitoring wells are located to the north of Building # 2 (one) and south of Building # 3 (one). These wells were installed as part of a groundwater remediation plan and treatment system currently being required by NJDEPE. The residence, which was located northeast of the site and received bottled water, was no longer in existence during the reconnaissance, and the property was vacant.

In summary, there has been a release of contaminants from the site to groundwater and there is a suspected release to surface water. Based on population estimates, 365 people are potentially exposed to this contamination. The site is in a rural area, but there are residents living 0.3 mile

from the site. No people attend school/day care in the vicinity of the site. No air release is suspected as the site is predominantly paved. Wetland sensitive environments are located adjacent to the site boundaries. Based on the ongoing NJDEPE remediation plan, additional sampling is recommended for wells within four miles of the Ames Rubber Corporation Wantage Plant. Furthermore, it is recommended that downstream sampling of the Wallkill River be performed to verify whether there are contaminants which have migrated to the surface water and are still present.


N
ONE MILE RADIUS
NEAREST
RESIDENCE
PPE
AMES RUBBER CORPORATION
NEAREST
DRINKING
WELL
SCALE
0
1 MILE
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
U.S. ENVIRONMENTAL PROTECTION AGENCY
AMES RUBBER CORPORATION
FIGURE 1
USGS HAMBURG QUAD
EBASCO ENVIRONMENTAL
AUGUST 1992



NOTES

1. FORMER DRUM STORAGE AREA (SWMU 7) LOCATION UNAVAILABLE
2. FORMER FLOOR DRAIN (SWMU 8) LOCATIONS THROUGHOUT THE FACILITY

NOT TO SCALE

LEGEND

×—×—	CHAIN LINK FENCE
◔	MONITORING WELL (MW)
SAA	SATELLITE ACCUMULATION AREA
⊗	TREES
⌇⌇⌇	WETLANDS
SWMU	SOLID WASTE MANAGEMENT UNIT
①	REFERS TO LOCATION OF PHOTOGRAPH

U.S. ENVIRONMENTAL PROTECTION AGENCY	
AMES RUBBER CORPORATION	
FIGURE 2 SITE SKETCH	
EBASCO ENVIRONMENTAL	AUGUST, 1992

SITE ASSESSMENT REPORT: ENVIRONMENTAL PRIORITIES INITIATIVE/ PRELIMINARY ASSESSMENT (EPI-PA)

PART I: SITE INFORMATION

1. Site Name/Alias Ames Rubber Corporation Wantage Plant

   Street Route 565

   City Wantage State New Jersey Zip 07461

2. County Sussex County Code 039 Cong. Dist. 5

3. EPA ID No. NJD 000 818 518

4. Block No. 2 Lot No. 60

   Block No. 7 Lot No. 7.03

   Block No. 7 Lot No. 8

5. Latitude 41°12′30″ Longitude 74°35′00″

   USGS Quad. Hamburg

6. Owner Ames Rubber Corporation Tel. No. (201) 827-9101

   Street 23-47 Ames Boulevard

   City Hamburg State New Jersey Zip Code 07419

7. Operator Ames Rubber Corporation Tel. No. (201) 827-9101

   Street Route 565

   City Wantage State New Jersey Zip Code 07461

8. Type of Ownership

   X Private ☐ Federal ☐ State

   ☐ County ☐ Municipal ☐ Unknown ☐ Other

9. Owner/Operator Notification on File

X RCRA 3001 Date: 11/80 ☐ CERCLA 103C Date: _____

☐ None ☐ Unknown

10. Permit Information

Permit	Pr.No.	Date Issued	Date	Comments
Time. Grinder # 1064	085191		092691	Deleted
Time. Grinder # 1063	085191		092691	Deleted
Wk. in Oven # 910-5	086101		082592	Temporary
Collector # 955	012721		052295	Permanent
Wk. in Oven # 910-4	052016		111291	Permanent
Solv.Mixing Vent # 1	047691		033096	Permanent
Rep. Press # 299	047690		111692	Deleted
Rep. Press # 297	047688		111692	Deleted
Press # 298A, hood	069318		081392	Deleted
Press # 294 & hood	069316		081392	Deleted
Rep. Press 293	069315		081392	Deleted
Rep. Press 292	069314		081392	Deleted
Press 295 & hood	077287		022892	Deleted
Rotoclone Coll Vent	044740		122592	Permanent
Elect. Oven # 910-6	077594		033092	Permanent
Gehn. Oven # 910-3	081219		032494	Deleted
Boiler	008639		011694	Permanent
Elect. Oven # 906-2	012733		080894	Permanent

Gehn. Oven # 910-2	082622		082622	Deleted
Walk in Oven # 1148	096715		082492	Temporary
Rotoclone # 1072	086102		061391	Deleted
Elect. Oven # 906-1	012732		080894	Permanent
Mac. Blaster # 939	077065		021493	Permanent
Rep. Press # 296	047687		033091	Deleted
Elect. Oven # 1094	094449		051294	Permanent
Elect. Oven # 1095	094448		051294	Permanent
Pad Painter 1@2	093832		012692	Temporary
Oxidizer Stack # 1	096038		092792	Temporary
Rep. Press # 298	095318		081692	Temporary
Grinder # 993-1A	099766		102992	Temporary
Sander # 993-4A	099765		102992	Temporary
Sander # 993-2A	099767		959282	Temporary
Weigh Station # 2A	099762		111196	Permanent
Rotoclone # 1072	100003		110592	Temporary
Low Pressure Boiler	098146		092995	Permanent
Holamatic # 454	077593		032493	Permanent
Elect. Oven # 906-11	083097		020293	Permanent
Gehn. Oven # 900-2	078735		011793	Deleted
Ovens # 904-3-6-7906 -3-4-5-9-10	078614		031493	Deleted
Want.Degreas. # 954	081943		021095	Permanent
Rep. Press # 1071	085845		021695	Permanent

PC Oven # 906-9-10	041073	_____	050691	Permanent
Oven # 910-3, hood	100115	_____	120991	Temporary
Oven # 910-2, hood	100116	_____	120991	Temporary
Oven # 910-2, hood	100116	_____	091091	Temporary
Water	NJ0098639			Active
Haz Waste Generator	NJD000818518			Active

11. Site Status

X Active ☐ Inactive ☐ Unknown

12. Years of Operation: 1/1/73 to present

13. Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

(a) Waste Sources

Waste Unit No.	Waste Source Type	Facility Name for Unit
1.	Containers	Hazardous Waste Roll-Off Dumpster
2.	Emission control	Thermal Oxidizers
3.	Drums	Hazardous Waste Drum Storage Area
4.	Drums	MEK Satellite Accumulation Area
5.	Drums	Methylene Chloride Satellite Accumulation Area
6.	Drums	1,1,1 - TCE Satellite Accumulation Area
7.	Drums	Former Drum Storage Areas
8.	Piping	Former Floor Drains

(b) Other Areas of Concern

Identify any miscellaneous spills, dumping, etc. on-site; describe the materials and identify their locations on-site.

None.

14. Information available from

Contact: Luz Martinez Agency: U.S.EPA Tel.No.: (212) 264-4561

Preparer: Richard Opem Agency: Resource Applications, Inc.

Date: 8/21/92

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
1	Hazardous Waste Roll-off Dumpster

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This unit stores hazardous waste on-site for a period of less than 90 days; therefore, it is not regulated. The unit has been in operation since 1980.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The dumpster receives solvent-contaminated facility solid wastes generated from the cleaning of equipment. The materials are predominantly rags and wipers. The unit is located west of Building # 2, adjacent to the southwest corner of the parking lot.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The steel dumpster is approximately 7 feet high, 8 feet wide and 30 feet long. Capacity is approximately 60 cubic yards.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical state of the waste is solid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substances present in the unit are methyl ethyl ketone (MEK), methylene chloride, and 1,1,1-trichloroethane.

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   The unit rests on a paved surface and is covered by a tarpaulin which is hooked to the sides.

SWMU-specific Conclusion:

No release of hazardous substances is known, alleged, or suspected to have occurred from this SWMU.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
2	Thermal Oxidizers

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   The oxidizers are not RCRA-regulated, but emissions are controlled by the facility's air permits for the unit.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The two oxidizers are made of cast metal and stand approximately 60 feet high. Emissions treated are generated from the site paint spray booth operations. The unit is located adjacent to the southern wall of Building # 2, in the eastern portion of the site.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The quantity of wastes emitted by the oxidizers is unknown.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical states of the waste are liquid and powder.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substance present in the unit is methyl ethyl ketone (MEK).

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   The unit rests on a paved surface and was in good condition during the reconnaissance.

SWMU-specific Conclusion:

No release of hazardous substances is known, alleged, or suspected to have occurred from this SWMU.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	(Facility Name for Unit)
3	Hazardous Waste Drum Storage Area

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This unit stores hazardous waste on-site for a period of less than 90 days; therefore, it is not regulated. The unit has been in operation since 1980.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The fenced, locked, storage area receives drummed liquid hazardous wastes from the Satellite Accumulation Areas (SWMUs 4-6) in the main process areas of Building # 2. The unit is located in the south-central portion of the site, west of the Hazardous Waste Roll-Off Dumpster (SWMU 1).

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The storage area is approximately 60 feet by 45 feet in size. The capacity of wastes handled is approximately 300 55-gallon drums.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical state of the waste is liquid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substances present in the unit are spent solvents methylene chloride, methyl ethyl ketone (MEK), and 1,1,1-trichloroethane. Some non-hazardous product drums are stored in the northern portion of the unit.

6. Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.

The waste drums rest on wooden pallets, which rest on a concrete pad. However, in the southern portion of the unit, some pallets rest on gravel and bare soil.

SWMU-specific Conclusion:

No release of hazardous substances is known, alleged, or suspected to have occurred from this SWMU.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
4	MEK Satellite Accumulation Area

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This storage area is not regulated since wastes are stored less than 90 days. The unit has been in operation since the 1980s.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The storage area collects solid and liquid hazardous wastes from the site painting, parts cleaning and degreasing operations in the main process areas of Building # 2. The unit is located in the south-central portion of Building # 2, adjacent to the paint spray booth.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The storage area is approximately 6 feet by 20 feet in size. The capacity of wastes handled is approximately 10 55-gallon drums.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical states of the wastes are liquid and solid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substance present in the unit is spent solvent methyl ethyl ketone (MEK).

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   The waste drums rest on wooden pallets, which are resting on a concrete floor.

SWMU-specific Conclusion:

No release of hazardous substances is known, alleged, or suspected to have occurred from this SWMU.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
5	Methylene Chloride Satellite Accumulation Area

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This storage area is not regulated since wastes are stored less than 90 days. The unit has been in operation since the 1980s.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The storage area collects solid and liquid hazardous wastes from the cleaning and degreasing operations in the main process areas of Building # 2. The unit is located in the northwest portion of Building # 2.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The storage area is approximately 3 feet by 6 feet in size. The capacity of wastes accumulated is two 55-gallon drums.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical states of the wastes are liquid and solid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substance present in the unit is spent solvent methylene chloride.

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   The waste drums rest on wooden pallets, which are resting on a concrete floor.

SWMU-specific Conclusion:

No release of hazardous substances is known, alleged, or suspected to have occurred from this SWMU.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
6	1,1,1-Trichloroethane Satellite Accumulation Area

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This storage area is not regulated since wastes are stored less than 90 days. The unit has been in operation since the 1980s.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The storage area collects solid and liquid hazardous wastes from the cleaning and degreasing operations in the main process areas of Building # 2. The unit is located in the northeast portion of Building # 2.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The storage area size is approximately 4 feet by 8 feet in size. The capacity of wastes handled is three 55-gallon drums.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical states of the wastes are liquid and solid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substance present in the unit is spent solvent 1,1,1-trichloroethane.

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   The waste drums rest on wooden pallets, which are resting on a concrete floor.

SWMU-specific Conclusion:

No release of hazardous substances is known, alleged, or suspected to have occurred from this SWMU.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
7	Former Drum Storage Areas

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This former storage area is not regulated. The unit has been out of operation since the mid-1980s.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The storage areas collected solid and liquid hazardous wastes from the site manufacturing operations in the main process areas of Building # 2. Locations of the areas are unknown and the facility personnel were unable to provide information as to the former locations.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The former storage area sizes are unknown.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical state of the wastes was liquid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substances present in the unit were spent solvents 1,1,1-trichloroethane, methylene chloride, and methyl ethyl ketone (MEK).

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   How the waste drums were contained is unknown. Facility personnel were unable to provide information.

SWMU-specific Conclusion:

It is not known nor has it been determined by the NJDEPE whether the site groundwater contamination occurred from a release from this unit. Not enough information is known at this time to make that determination.

Ref. No. 2

PART II: WASTE SOURCE INFORMATION (For RCRA Solid Waste Management Units {SWMUs})

For each of the waste units identified in Part I, complete the following items.

Waste Unit (No.)	**(Facility Name for Unit)**
8	Former Floor Drains

1. **Identify the RCRA status and permit history, if applicable, and the age of the SWMU.**

   This former piping system is not regulated. The unit has been out of operation since the mid-1980s.

2. **Describe the SWMU and clearly identify its location on a site map.**

   The piping system collected industrial process wastewater from the site manufacturing operations in the main process areas of Building # 2. The system was located throughout the building.

3. **Identify the size or quantity of the waste (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums, or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The quantities of process wastewater generated are unknown.

4. **Identify the physical state(s) of the waste(s) as disposed of in the SWMU. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid or gas.**

   The physical state of the wastes was liquid.

5. **Identify specific hazardous substances(s) known or suspected to be present in the SWMU.**

   The hazardous substances present in the unit were spent solvents 1,1,1-trichloroethane, methylene chloride, and methyl ethyl ketone (MEK).

6. **Describe the containment of the SWMU unit as it relates to releases to groundwater, surface water, soil and air.**

   The floor drains were located on concrete flooring and the piping system was contained underground.

SWMU-specific Conclusion:

It is not known nor has it been determined by the NJDEPE whether the site groundwater contamination occurred from a release from this unit. Not enough information is known at this time to make that determination.

Ref. No. 2

PART III: PREVIOUS INVESTIGATIONS

EXISTING ANALYTICAL DATA

As previously stated, Ames Rubber sampled the site's two drinking water supply wells in 1984. Sample results are shown in Table 1.

Analyses were also performed on a private drinking water well approximately 150 feet northeast of the site. 1,1,1-trichloroethane contamination was discovered. As a result, Ames Rubber had provided bottled water to the household served by the private well as an alternate drinking water source. The house has since been demolished and the residents have relocated. A Phase I investigation including sampling was conducted by Ames Rubber, which resulted in a report submitted to the state on August 1, 1985. Ames Rubber agreed to conduct a remedial investigation and feasibility study (RI/FS) of remedial action alternatives for the site. Currently, Ames Rubber is drafting a detailed remedial action plan to NJDEPE for approval. Monitoring wells are located to the north of Building # 2 (one) and south of Building # 3 (one). These wells were installed as part of a groundwater remediation plan and treatment system currently being required by NJDEPE.

SITE RECONNAISSANCE RESULTS

A site reconnaissance was performed on July 28, 1992 to document existing site conditions, note the locations and conditions of the buildings, and observe the locations of all potential source areas of contamination. No sampling was conducted. The site property was observed during the reconnaissance as well as the indoor process areas. The manufacturing processes were inactive due to an annual two-week shutdown period for maintenance and inventory. Workers were not on-site. Facility housekeeping was in good order at all process and waste management areas. The presence of the Thermal Oxidizers (SWMU 2) was noted as this was not contained in state file material.

The 10-acre site contains two buildings, Building # 2 and Building # 3. Building # 2 is used for manufacturing and Building # 3 (west of Building # 2) is used for personnel training and product development. The site terrain consists of rolling hills. To the east, south, and west of the site are marshes and swamplands. State Highway 565 and wetland area lie to the north. The nearest residence is located 0.5 mile northwest of the site. Site surface water flows overland to the east and eventually drains to the Wallkill River 0.3 mile from the site.

On-site wastes are generated from the manufacturing of elastomerically-coated metal roller parts for the copier industry. Operations consist of spray painting and cleaning roller parts. Solid waste management units (SWMUs) consist of drum storage areas, hazardous waste collection roll-off dumpsters and air emission control devices. Monitoring wells are located to the north of Building # 2 (one) and south of Building # 3 (one). These wells were installed as part of a groundwater remediation plan and treatment system currently being required by NJDEPE. There have been no reports of any abnormal illnesses by employees since the occupation of Ames Rubber in these buildings.

While accomplishing the site investigation, there was no evidence of any surficial soil contamination, nor were there any discolorations on the asphalt. The marshy wetland areas surrounding the site were surveyed and there was no evidence of any contaminant migration from surface water. Photographs taken during the reconnaissance are presented in Appendix A.

TABLE 1

AMES RUBBER CORPORATION
SAMPLING RESULTS SUMMARY TABLE[2]
JULY 1984

LOCATION	COMPOUND\ELEMENT	RESULTS[1]
Well # 1 (exact location unknown, depth = 300 feet)	1,1-dichloroethane	44
	1,1-dichloroethylene	65
	1,1,1-trichloroethane	580
Well # 2 (exact location unknown, depth = 96 feet)	1,1-dichloroethane	34
	1,1-dichloroethylene	98
	1,1,1-trichloroethane	1,100

(1) Concentration in parts per billion
(2) Ref. No. 12, pp. 1,2

PART IV: HAZARDOUS WASTE ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of the release of contaminant(s) to the groundwater as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide rationale for attributing them to the site. For observed release, define supporting analytical evidence.**

Review of documented analytical data from NJDEPE involvement at the site indicate that there has been an observed release to the groundwater of inorganic contaminants 1,1,1-trichloroethane, 1,1- dichloroethane, and 1,1-dichloroethylene.

Ref. No. 12, pp.1,2

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, areas of karst terrain, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

The glacial deposits cover bedrock in the area under the site. The uppermost deposit beneath the site is of Wisconsinan age, and consists of stratified sand and gravel deposited at the ice margin by meltwater streams. Immediately east of the facility is the margin between these stratified deposits and a discontinuous fill deposit. This consists of unstratified and unsorted boulders and gravel in a matrix of sand, silt, and clay, deposited directly from ice. The Wisconsinan glacial deposits may be underlain by older Jerseyan and Illinoian glacial material. The thickness of glacial deposits varies considerably in the area; the nearest measurement is approximately 0.5 mile west of the facility, where the depth to bedrock is 91 feet.

Beneath the unconsolidated deposits, the uppermost bedrock beneath the facility is of Middle to Upper Ordovician age. The geology in this region of northern New Jersey is complex, consisting of a large number of fairly low-angle thrust faults, which have upthrust slices of Ordovician, Cambrian, and Proterozoic rocks in a northwesterly direction. The faulting event appears to have occurred throughout the early Paleozoic and ceased sometime in the Middle or Upper Ordovician. Beneath the site, the Martinsburg Hornfels occurs in the area as a result of metamorphosis of the Martinsburg shale by the Beemerville Nepheline Syenite. The hornfels is a dense, fine-grained, dark-gray-to-black rock extending about 2,000 feet from the intrinsic body. This unit provides a limited source of groundwater in the region.

The primary aquifer of concern beneath the site is the Martinsburg Formation, of upper to middle Ordovician age. In the vicinity of the site, this unit generally lies at depths of between 10 and 50 feet. In general, the upper part of the Martinsburg formation is medium-to-fine-grained arkosic sandstone or greywacke, with a few lenses of shale and conglomerate. The lower section is mostly banded blue-gray shale and slate. The uppermost rock of this unit beneath the site is gray shale. The static water level in the

on-site wells is approximately 40 feet. The on-site wells yield up to 4.5 gallons per minute. Groundwater flow is toward the east. The Martinsburg Formation has no primary porosity or permeability; nearly all groundwater is contained in fractures. The most successful wells occur in the weathered zone, within 200 feet of the surface. Yields in the Martinsburg Formation average 10 gallons per minute.

Fifteen domestic wells in the region are completed in the Kittatinny Formation, which consists of the Leithsville, Allentown, and Beekmantown rocks. The wells draw on groundwater that occurs in fractures and solution cavities within the limestone and dolomite. Such water is found both under unconfined and semi-artesian conditions.

Ref. No. 13

3. **Is a designated well head protection area within 4 miles of the site?**

Since the state wellhead protection areas are designated for the protection of drinking water from public water supply wells, there are no designated well head protection areas within four miles of the site.

Ref. No. 16

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

The lowest point of waste disposal/storage on-site is at ground level. The depth to the aquifer of concern is approximately 96 feet and could possibly be lower, but static water levels in the on-site wells are unknown. Therefore, the distance is approximately 96 feet.

Ref. No. 12, pp. 1,2

5. **What is the permeability value of the least permeable intervening stratum between the ground surface and the aquifer of concern?**

The intervening material between the aquifer of concern and the ground surface consists of sand and gravel deposits, and some till. Thus, the least permeable material is the glacial till, with an approximate value of 1.8×10^{-3} cm/sec.

Ref. No. 10

6. **What is the net precipitation for the area?**

The net precipitation for this area is 13 inches per year, based on observations from Newton, NJ and a mean annual lake evaporation rate of 31 inches.

Ref. No. 14

7. **What is the distance to and depth of the nearest well that is currently used for drinking purposes?**

There are two wells directly on-site that are currently used for drinking purposes. One well is 300 feet deep, the other is 96 feet deep.

Ref. No. 6, Ref. No. 12.

8. **If a release to groundwater is observed or suspected, determine the number of people that obtain drinking water from wells that are documented or suspected to be located within the contaminated boundary of release.**

Since groundwater flow is northeast towards the Wallkill River, it is estimated that the contaminated boundary of release extends northeast to the Wallkill River, approximately 0.3 mile from the site. Approximately 365 people are served by wells in this area.

Ref. No. 2, Ref. No. 3, Ref. No. 13

9. **Identify the population served by wells located within 4 miles of the site that draw from the aquifer of concern.**

Distance	Population
0-¼ mi	115
>¼-½ mi	250
>½-1 mi	250
>1-2 mi	5,410
>2-3 mi	4,086
>3-4 mi	3,466

Ref. No. 2, Ref. No. 3

10. **Identify uses of groundwater within 4 miles of the site (i.e. private drinking sources, municipal sources, commercial, irrigation, unusable).**

All wells within four miles of the site are used for drinking water purposes. There are two wells within 500 feet of the site, approximately 20 wells within a one-mile radius, and over 300 wells in a four-mile radius from the site.

Ref. No. 4

SURFACE WATER ROUTE

11. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

The viable route to surface water is east towards the Wallkill River, approximately 0.3 mile from the site. Based on groundwater flow and the observed groundwater release, a release to surface water is suspected.

Ref. No. 2, Ref. No. 12

12. **Identify the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.**

The nearest downslope surface water body is Papakating Creek, which is a tributary to the Wallkill River. The surface drainage pattern from the facility to Papakating Creek is to the east.

Ref. No. 1

13. **What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.**

The distance to the nearest downslope surface water body, Papakating Creek, is approximately 1,900 feet.

Ref. No. 1

14. **Define the floodplain that the site is located within.**

Based upon flood zone map no. 3405620030A, the site lies in Zone C, outside the 500-year flood plain.

Ref. No. 7

15. **What is the two-year 24-hour rainfall?**

The two-year 24-hour rainfall is 2.27 inches.

Ref. No. 14

16. **Identify drinking water intakes in surface waters within 15 miles downstream of the site. For each intake, identify the distance from the point of surface water entry, population served, and stream flow at the intake location.**

Intake	Distance	Population Served	Flow (cfs)

There are no drinking water intakes in surface waters within 15 miles downstream of the potential point of entry.

Ref. No. 4

17. **Identify fisheries that exist within 15 miles downstream of the point of surface water entry. For each sensitive environment, specify the following:**

Fishery	Water Body Type	Flow (cfs)
Wallkill River	River	Unknown

Ref. No. 2

18. **Identify sensitive environments that exist within 15 miles of the point of surface water entry. For each sensitive environment specify the following:**

Environment	Water Body Type	Flow (cfs)
Wetlands	Marsh	Unknown
Wallkill River	River	Unknown
Papakating Creek	Stream	Unknown

Ref. No. 2

19. **If release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 16-18 that are or may be located within the contamination boundary of the release.**

Intake	Fishery	Environment
None	Wallkill River	Wetlands

Ref. No. 2

SOIL EXPOSURE PATHWAY

20. **Determine the number of people that occupy residence or attend school or day care on or within 200 feet of the site property.**

There are no residences, schools or day care centers within 200 feet of the site property.

Ref. No. 2

21. **Determine the number of people that work on or within 200 feet of the site property.**

Approximately 115 people are employed by the Ames Rubber Wantage plant.

Ref. No. 2

22. **Identify terrestrially-sensitive environments on or within 200 feet of the site property.**

There are no terrestrial sensitive environments within 200 feet of the site.

Ref. No. 5

AIR ROUTE

23. **Describe the likelihood of release of contaminants to air as follows: observed release, suspected release, or none. Identify contaminants detected or suspected, and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

Eight years ago the discharge of contaminants was to the groundwater. There was no evidence of air release during the reconnaissance, and a release to air is not suspected.

Ref. No. 2, Ref. No. 12, pp. 1,2

24. **Determine populations that reside within 4 miles of the site.**

Distance	Population
0-½ mi	115
>¼-½ mi	250
>½-1 mi	250
>1-2 mi	5,410
>2-3 mi	4,086
>3-4 mi	3,466

Ref. No. 3

25. **Identify sensitive environments and wetlands acreage within ½ mile of the site.**

Sensitive Environment	Type	Distance
Wetlands	River	1,000 feet
Wallkill River	River	1,600 feet
Papakating Creek	Stream	1,900 feet

There are approximately 100 acres of wetlands within a one-half mile radius of the site.

Ref. No. 15, Ref. No. 1

26. **If a release to air is observed or suspected, determine the number of people that reside or are suspected to reside within the area of the air contamination from the release.**

No release to air is suspected.

Ref. No. 2, Ref. No. 12, pp.1,2

27. **If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 25, that are or may be located within the area of air contamination from the release.**

No release to air is suspected.

Ref. No. 2, Ref. No. 12, pp.1,2

REFERENCE LIST

REFERENCES

1. U.S. Geological Survey, 7.5-Minute Topological Map, Hamburg, New Jersey Quadrangle, 1976.

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7. Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map, Wantage, New Jersey, Panel Number 340562 0030A, 1984.

8. Ames Rubber Corporation, Notification of Hazardous Waste Activity, August 18, 1980.

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11. Correspondence between Joseph Douglass, Ames Rubber Corporation and Steve Urbanik, NJDEPE, July 20, 1992.

12. New Jersey Department of Environmental Protection and Energy, Administrative Consent Order, 1992.

13. Stanford, S.D. and Harper, D.P., Reconnaissance Map of the Glacial Geology of the Hamburg Quadrangle, New Jersey. New Jersey Geological Survey Geological Map Series 85-1., 1985.

14. Yadavalli, S., RAI, Personal communication with Keith Arneson, NJDEPE, August 10, 1992.

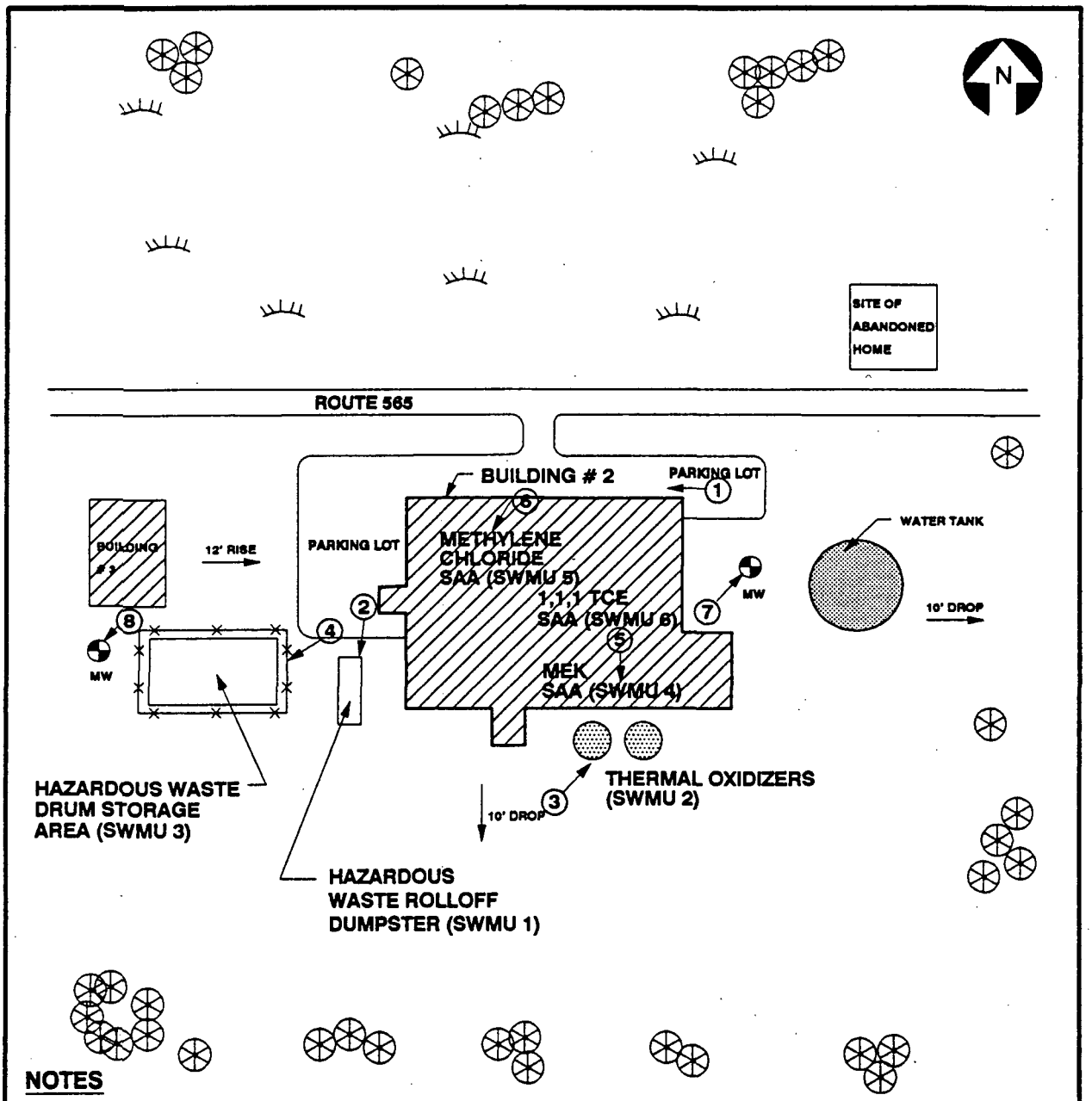
15. Opem, R., RAI, Wetland acreage calculations, August, 1992.

16. Supple, A., RAI, Personal communication with Daniel Van Abs, August 19, 1992.

APPENDIX A

APPENDIX A
AMES RUBBER CORPORATION
PHOTOGRAPH LOG

PHOTOGRAPH NUMBER	DESCRIPTION OF PHOTOGRAPH
# 1	View of front of Building # 2 from parking lot. All process activity at the site takes place in this building.
# 2	View looking south of the Hazardous Waste Roll-Off Dumpster (SWMU 1). This unit, located in the southwest corner of the parking lot to the west of Building # 1, manages office wastes which have been contaminated with solvents used on-site.
# 3	View facing north Thermal Oxidizers (SWMU 2). These oxidizers, located along the south wall of Building # 2, manage methyl ethyl ketone (MEK) emissions from spray booth operations.
# 4	View looking east of the Hazardous Waste Drum Storage Area (SWMU 3). This unit, located to the west of the Hazardous Waste Roll-Off Dumpster (SWMU 2), manages spent solvents MEK, 1,1,1-trichloroethane, and methylene chloride.
# 5	South view of the MEK Satellite Accumulation Area (SWMU 4), located on the south side of Building # 2 adjacent to the paint spray booth area.
# 6	View looking south of the Methylene Chloride Satellite Accumulation Area (SWMU 5), located in the northwest section of Building # 2.
# 7	View facing east of monitoring well # 1 located near the east-central section of Building # 2.
# 8	View looking west of monitoring well # 2 located at the southeast corner of Building # 1.



NOTES

1. FORMER DRUM STORAGE AREA (SWMU 7) LOCATION UNAVAILABLE
2. FORMER FLOOR DRAIN (SWMU 8) LOCATIONS THROUGHOUT THE FACILITY

NOT TO SCALE

LEGEND

×—×—	CHAIN LINK FENCE
◔	MONITORING WELL (MW)
SAA	SATELLITE ACCUMULATION AREA
⊗	TREES
⌇⌇⌇	WETLANDS
SWMU	SOLID WASTE MANAGEMENT UNIT
①	REFERS TO LOCATION OF PHOTOGRAPH

U.S. ENVIRONMENTAL PROTECTION AGENCY

AMES RUBBER CORPORATION

FIGURE 2
SITE SKETCH

EBASCO ENVIRONMENTAL | **AUGUST, 1992**

SITE RECONNAISSANCE PHOTOGRAPH #1

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View of front of Building #2 from parking lot. All process activity at the site takes place in this building.

SITE RECONNAISSANCE PHOTOGRAPH #2

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View looking south of the Hazardous Waste Roll-Off Dumpster (SWMU 1). This unit, located in the southwest corner of the parking lot to the west of Building #1, manages office wastes which have been contaminated with solvents used on site.

SITE RECONNAISSANCE PHOTOGRAPH #3

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View facing north Thermal Oxidizers (SWMU 2). These oxidizers, located along the south wall of Building #2, manage methyl ethyl ketone (MEK) emissions from spray booth operations.

SITE RECONNAISSANCE PHOTOGRAPH #4

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View looking east of the Hazardous Waste Drum Storage Area (SWMU 3). This unit, located to the west of the Hazardous Waste Roll-Off Dumpster (SWMU 2), manages spent solvents MEK, 1,1,1-trichloroethane, and methylene chloride.

SITE RECONNAISSANCE PHOTOGRAPH #5

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

South view of the MEK Satellite Accumulation Area (SWMU 4), located on the south side of Building #2 adjacent to the paint spray booth area.

SITE RECONNAISSANCE PHOTOGRAPH #6

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View looking south of the Methylene Chloride Satellite Accumulation Area (SWMU 5), located in the northwest section of Building #2.

SITE RECONNAISSANCE PHOTOGRAPH #7

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View facing east of monitoring well #1 located near the east-central section of building #2.

SITE RECONNAISSANCE PHOTOGRAPH #8

Location: Ames Rubber Corporation
Wantage, NJ

Date: July 28, 1992

Photographer: Catherine Tolley, RAI
Witness: Richard Opem, RAI

View looking west of monitoring well #2 located at the southeast corner of Building #1.

REFERENCE NO. 1

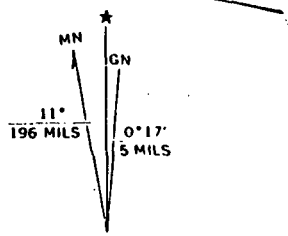
Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USC&GS and New Jersey Geodetic Survey

Topography from aerial photographs by stereophotogrammetric methods. Aerial photographs taken 1942 and 1951. Field check 1943. Culture revised by the Geological Survey 1954

Polyconic projection. 1927 North American datum
10,000-foot grid based on New Jersey coordinate system
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1971. This information not field checked



UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

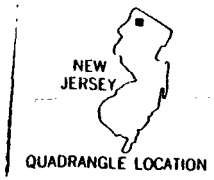
Map photoinspected 1976
No major culture or drainage changes observed

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
( ) Interstate Route { } U. S. Route ( ) State Route

HAMBURG, N. J.

41074-B5-TF-024
PHOTOINSPECTED 1976
1954
PHOTOREVISED 1971
DMA 6066 II NE—SERIES V822



QUADRANGLE LOCATION

SCALE 1:24000

1 ½ 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

REFERENCE NO. 2

(2)

(2)

Ames Rubber Corporation 11:20, AM Enter
7/28/92
Wantage, N.J.

Meet with Joe Douglass, Ames
- Richard Opem, RAI, Task Leader
- Catherine Tolky, RAI, HSO

Weather: Sunny, 75°
light breeze

R. Opem 7-28-92

6-9-92 Groundwater Treatment plan submitted to state

Air Permits (hundreds)

Roto-Clone → dust control for equipment (process) – 60' high

existing 1 UST → 10,000 gallon fuel oil

MEK emissions to thermal oxidizers (2) 60' high

Storage pad → Solid haz. and non-haz. dumpsters

Many Satellite stations → 1 drum per waste stream

Wallkill River → nearest surface water

- Produce Rollers for copier industry → formerly typewriter platens

Steel Dumpster Solid non-haz – 9' x 30' x 8'
Not covered
height

Steel Dumpster Solid haz waste

Contains Paper, cans contains w/solvent 4' x 30' x 8
Covered w/ Tarpaulin hooked
height

A. Opem 7-28-92

Haz waste pad 10 rows - 4 pallets each capacity
pallets half-full
- some ~~[illegible]~~ of area lays on gravel only (to east)
  Non-haz, product to the right (west)

- 5 satel

R.O. 12-28-92

pallets each capacity
half-full
ly (to east)
the right (west)

Plant 2 - Product Development
and Training → being refurbished at time of recon.

MW - pumped to trc

• Silicon rolls painted
in spraybooths

or ③ → yes
3 satellite stations?
~~[illegible]~~

SWMU → 6' high 1,1,1 tanks (4) 3' x 3' TCE → parts washing roller
3' wide

450 all 4 plants

Roto - Clone - dust collection
permit

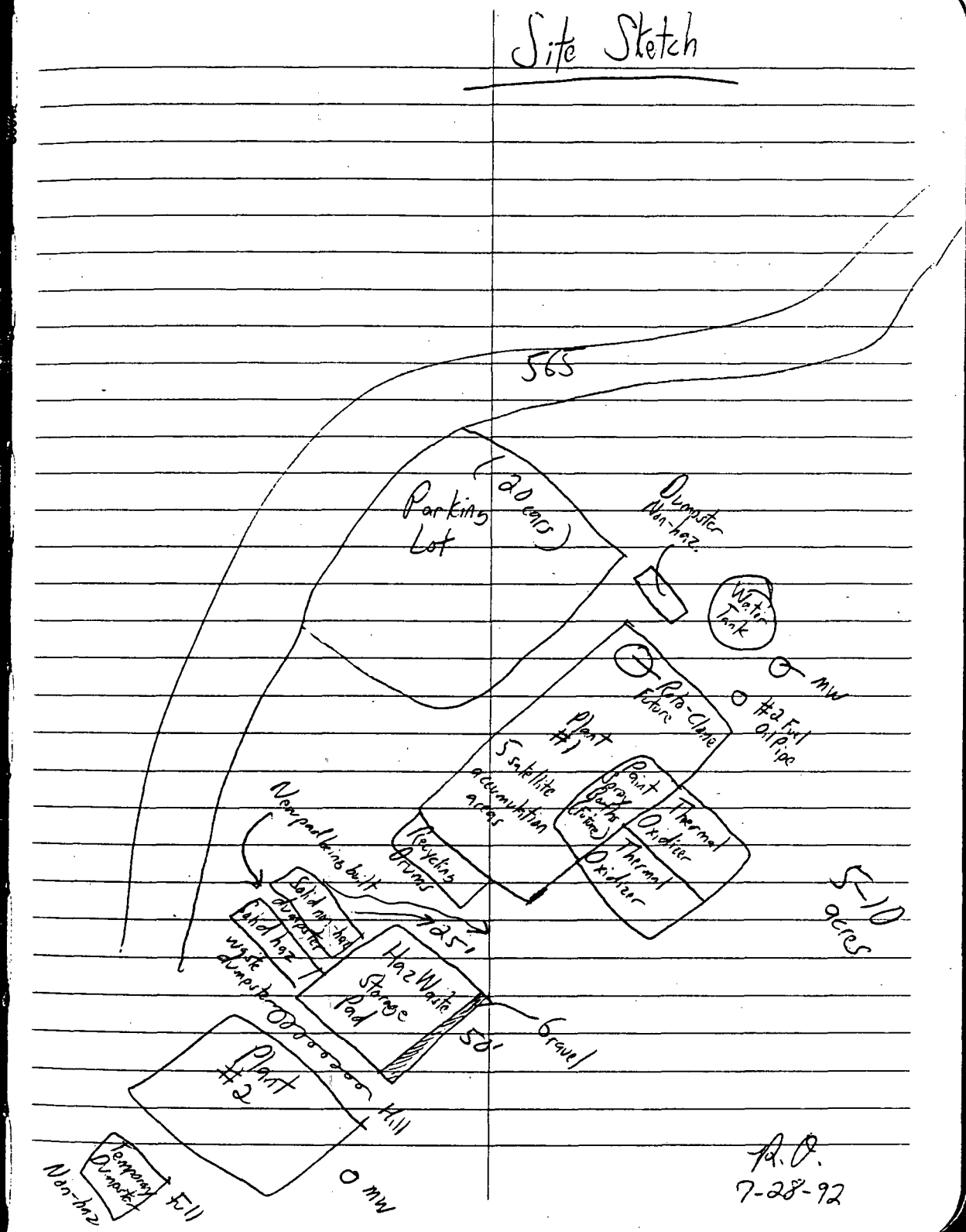
Satellite Area	Rags	Solvent
	Solid haz waste	Liq. haz waste

Discharge to Wallkill River → Non contact cooling water → Permit applied for 1985

12:15 finish

R.O.
7-28-92

Site Sketch



A.O.
7-28-92

Perimeter Survey

27 houses within 1 mile to north
0 to south
0 to ~~west~~ west

- Wallkill River, 3 miles to north
- Wetlands on perimeter of site to east, north
- Road (Rte 565) to ~~west~~ north
- 1st house, 3 miles to northwest
- Site of demolished house, 1 mile to north

- Rolling hills around perimeter
- Surf. Water Overland flow to N,

SWMUs

Rotoclone → New? Not used, installed yet.
Septic System? Yes, only domestic waste

R.O. 7-28-92

AMES RUBBER 7-28-92

CATHERINE F. TOLLEY

arrived 11:20 am
Joe Douglas

- gave us monitoring plan
- In process of constructing g.w. treatment/monitoring
  consent order.

- S.W. only condition that might be out of compliance
  will have 2 recovery wells and will cover whole area permits
- NODES
- Hydrogeologic report done before g.w.

- process equipment, air permits, dust, volatile

- UST certificate will check on 1 UST, 10,000 gal. fuel oil

MEK omission go to thermal oxidizers have 2, one is backup

- Haz. waste storage pad for drums.
- Solid haz + non haz. dumpsters.

CAT 7/28/12

satellite station - 1 dumpster per waste stream, when full is sealed and delivered to waste pit.

RCRA inspection done in April

Walkhill river closest

pop? unknown, rural.

12:26 general walking tour

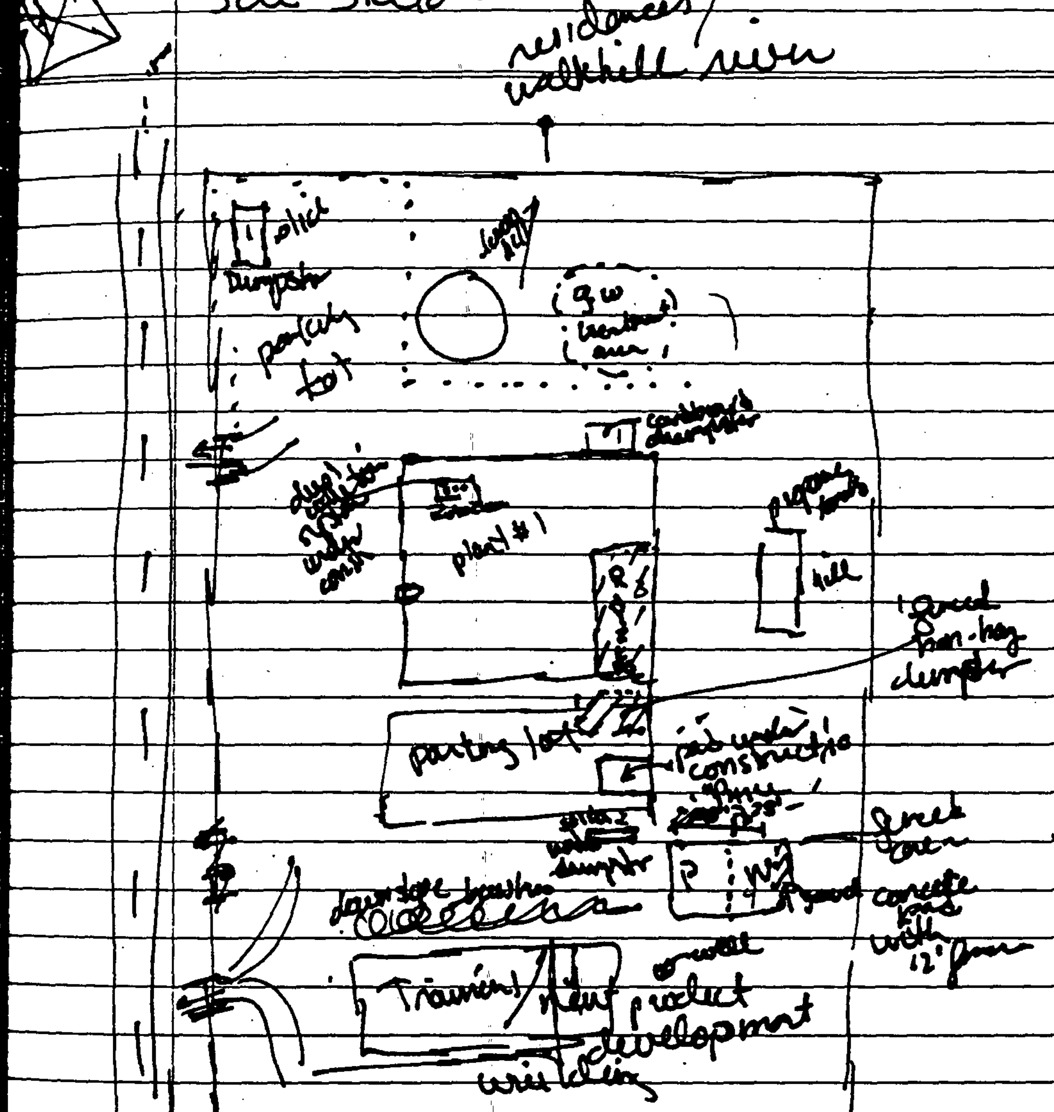
- perimeter clockwise from front door, plant under renovation

3 set stations, one in process of constructing 1 more

- Hanbey has map of site
- electricity out today working on backup so very dark.

CFT
7-28-92

Site Sketch



CFT 7-28-92

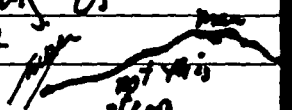
Ft Sill

house count

dens = .1 rural = .3
nearest res. = .3

within 1 mile = 27 res. on roads north south none, west and east ? see maps.
surface water flow - none
wetlands surrounding site

site set on route 565 near junction of Rte 23, area surrounding is very green, land is not flat, site is set on relatively flat area, training building is down hill from main plant



surrounding area is rolling hills, very steep in some places. across the street is relatively flat open field

OFT 7-28-82

REFERENCE NO. 3

LATITUDE 41:12:29 LONGITUDE 74:35: 0 1980 POPULATION

KM	0.00- 0.4	0.4- 0.8	0.8- 1.6	1.6- 3.2	3.2- 4.8	4.8- 6.4	SECTOR TOTALS
S 1	0	0	0	5410	4086	3466	12962
RING TOTALS	0	0	0	5410	4086	3466	12962

AMES RUBBER CORPORATION
WANTAGE, NEW JERSEY

Graphical Exposure Modeling System
General Science Corporation
April 1990

REFERENCE NO. 4

(4)

RAI MEMORANDUM OF TELEPHONE CONVERSATION

PROJECT NUMBER A4020-001 DATE 8/18/92 TIME 3:20 p.m.

PROJECT NAME EBASCO PAS - Ames Rubber and Schneider-Marquard

BETWEEN Alan Supple AND Mr. Steve Striesen

FIRM Sussex County (NJ) Health Dept. ADDRESS

TELEPHONE NUMBER 201/948-4545

CALL PLACED BY:

[X] RAI

[ ] OTHER PARTY

SUBJECT Water Wells in the vicinity of the above sites

DISCUSSED Mr. Striesen told me that there is no municipal water supply in the communities surrounding these sites; the vast majority of people obtain water from private wells. He estimated the number of wells as below:

Ames Rubber within 500' - 2 wells
" 1 mile - ≈20 wells
" 4 miles - more than 300 wells

Schneider-Marquard - probably ≈120 wells within a 4-mile radius, including Fredon Public School and Town Hall (very close by)

Most wells in both areas are thought to be completed in Martinsburg Shale, although some may be in glacial deposits, especially east of Ames, adjacent to Walkill River → sand & gravel.

Only about half the wells are recorded, as some are too old.

[ ] NEED FOLLOW-UP

Alan L. Supple
SIGNATURE

END

REFERENCE NO. 5

RAI MEMORANDUM OF TELEPHONE CONVERSATION

PROJECT # A4020-200-05-40A DATE 8/19/92 TIME 1:15

PROJECT NAME EBASCO ARCS II

BETWEEN S. Vadavalli AND S. Stiegen

FIRM Sussex County (NJ) Health Department

ADDRESS

TEL. NUMBER

CALL PLACED BY: ☐ RAI

☐ OTHER PARTY

SUBJECT Sensitive environments near site

DISCUSSED Called to check on identification of any terrestrial/sensitive environments or fisheries (besides Wallkill River) w/in 15 miles of the Ames site. None were identified except for the surrounding wetlands.

☐ NEEDS FOLLOW-UP

R. Ozerin

SIGNATURE

g:\misc\teleform

REFERENCE NO. 6

(6)

RAI MEMORANDUM OF TELEPHONE CONVERSATION

PROJECT # A4020-200-05-40A DATE 8/18/92 TIME 3:58 PM

PROJECT NAME ARCS II Ames Rubber PA

BETWEEN Rich Chem RAI AND J. Douglass, Ames Rubber

FIRM Ames Rubber

ADDRESS Wantage, NJ

TEL. NUMBER (201) 827-9101

CALL PLACED BY: ☒ RAI

☐ OTHER PARTY

SUBJECT Groundwater discharge, septic question

DISCUSSED Check with Mr. Douglass to find out the real reason for the groundwater discharge of contaminants which were detected in 1984. I thought it was a septic system discharge but Mr. Douglass said this was not the problem. He said nobody was sure what the real source of contaminants was, but that some former drum storage areas, no longer in existance were thought to be the problem. These areas were in various locations unknown to him, around the site. He didn't know if they had secondary containment. I also checked to make sure if any other spent solvent wastes were generated besides MEK 1,1,1- Trichlor and Methylene Chloride. No he said, those three were the only solvents.

8-18-92

☐ NEEDS FOLLOW-UP

Richard Chem
SIGNATURE

g:\misc\teleform

REFERENCE NO. 7

D 81

NATIONAL FLOOD INSURANCE PROGRAM

(7)

FIRM
FLOOD INSURANCE RATE MAP

TOWNSHIP OF
WANTAGE,
NEW JERSEY
SUSSEX COUNTY

PANEL 30 OF 40
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
340562 0030 A
EFFECTIVE DATE:
FEBRUARY 15, 1984

Federal Emergency Management Agency


RM4
PRIVATE
DRIVE
ZONE C
392
392
ZONE B
ROAD
ACCESS
ROAD
RM5
ZONE C
NE A3
ZONE B
RAILROAD
ZONE B
ZONE C
CORPORATE LIMITS
ZONE B
ZONE B
ZONE C
ZONE C
393
ZONE C
PRIVATE DRIVE
ZONE B

REFERENCE NO. 8

Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

GSA No. 0246-EPA-OT

EPA — U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

I. INSTALLATION'S EPA I.D. NO.

II. NAME OF INSTALLATION

III. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE
(not in book)

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site, where hazardous waste is generated, treated, stored and/or disposed on, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act)*.

DETACH

FOR OFFICIAL USE ONLY

COMMENTS

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
F NJD 000 818 518 T/A 2 1		80 08 18

I. NAME OF INSTALLATION

AMES RUBBER CORPORATION

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX		
3 ROUTE 94		
CITY OR TOWN	ST.	ZIP CODE
4 HAMBURG	NJ	07419

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER		
5 ROUTE 565		
CITY OR TOWN	ST.	ZIP CODE
6 SUSSEX	NJ	07461

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title)	TELEPHONE NO. (area code & no.)
7 MAJOS RICHARD DIR REG AFFAIRS	201 827 9101

V. OWNERSHIP

NAME OF INSTALLATION'S LEGAL OWNER
8 AMES RUBBER CORPORATION

DETACH

B. TYPE OF OWNERSHIP (enter the appropriate letter into box)	VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))
F = FEDERAL M = NON-FEDERAL M	☒ A. GENERATION ☐ B. TRANSPORTATION (complete item VII) ☒ C. TREAT, STORE, DISPOSE ☐ D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only — enter "X" in the appropriate box(es))

☐ A. AIR ☐ B. RAIL ☐ C. HIGHWAY ☐ D. WATER ☐ E. OTHER (specify)

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

☒ A. FIRST NOTIFICATION ☐ B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

EPA Form 8700-12 (6-80)

CONTINUE ON REVERSE

REFERENCE NO. 9

...ed for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F NJD000818518 | TIN C | 3D

1 2 ... 13 14 15

LABEL ITEMS

II. EPA I.D. NUMBER

III. FACILITY NAME

IV. FACILITY MAILING ADDRESS

V. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as: mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

SKIP

AMES RUBBER CORP. WANTAGE PLANT

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title) | B. PHONE (area code & no.)

RICHARD J MAJOS MGR REG AFFAIR | 201 | 827 | 9101

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

23-47 AMES BLVD.

B. CITY OR TOWN | C. STATE | D. ZIP CODE

HAMBURG | NJ | 07419

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

ROUTE 565

B. COUNTY NAME

SSEX

C. CITY OR TOWN | D. STATE | E. ZIP CODE | F. COUNTY CODE (if known)

WANTAGE | NJ | 07461 |

EPA Form 3510-1 (6-80)

CONTINUE ON REVERSE

A. FIRST	B. SECOND
3069 (specify) RUBBER PRODUCTS	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME

AMES RUBBER CORPORATION

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL; M = PUBLIC (other than federal or state); S = STATE; O = OTHER (specify); P = PRIVATE

P (specify)

D. PHONE (area code & no.)

201 827 9101

E. STREET OR P.O. BOX

23-47 AMES BLVD

F. CITY OR TOWN	G. STATE	H. ZIP CODE
HAMBURG	NJ	07419

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	N	D. PSD (Air Emissions from Proposed Sources)	P
B. UIC (Underground Injection of Fluids)	U	E. OTHER (specify)	(specify)
C. RCRA (Hazardous Wastes)	R	E. OTHER (specify)	(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements. F9: A/S1

XII. NATURE OF BUSINESS (provide a brief description)

F9: A/S1

Ames Rubber Corporation is primarily a custom producer of elastomerically coated metal products such as typewriter platens and paper- or film-feeding roller mechanisms. In addition to the production of other smaller elastomerically coated metal parts, our manufacturing facilities routinely mold elastomeric products used in the paper goods industry, the automotive industry, and many others. Some of the types of elastomeric compounds used and produced for our customer applications include natural rubber, SBR, nitrile types, silicone, butyl, polyurethane and others.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments, and that based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

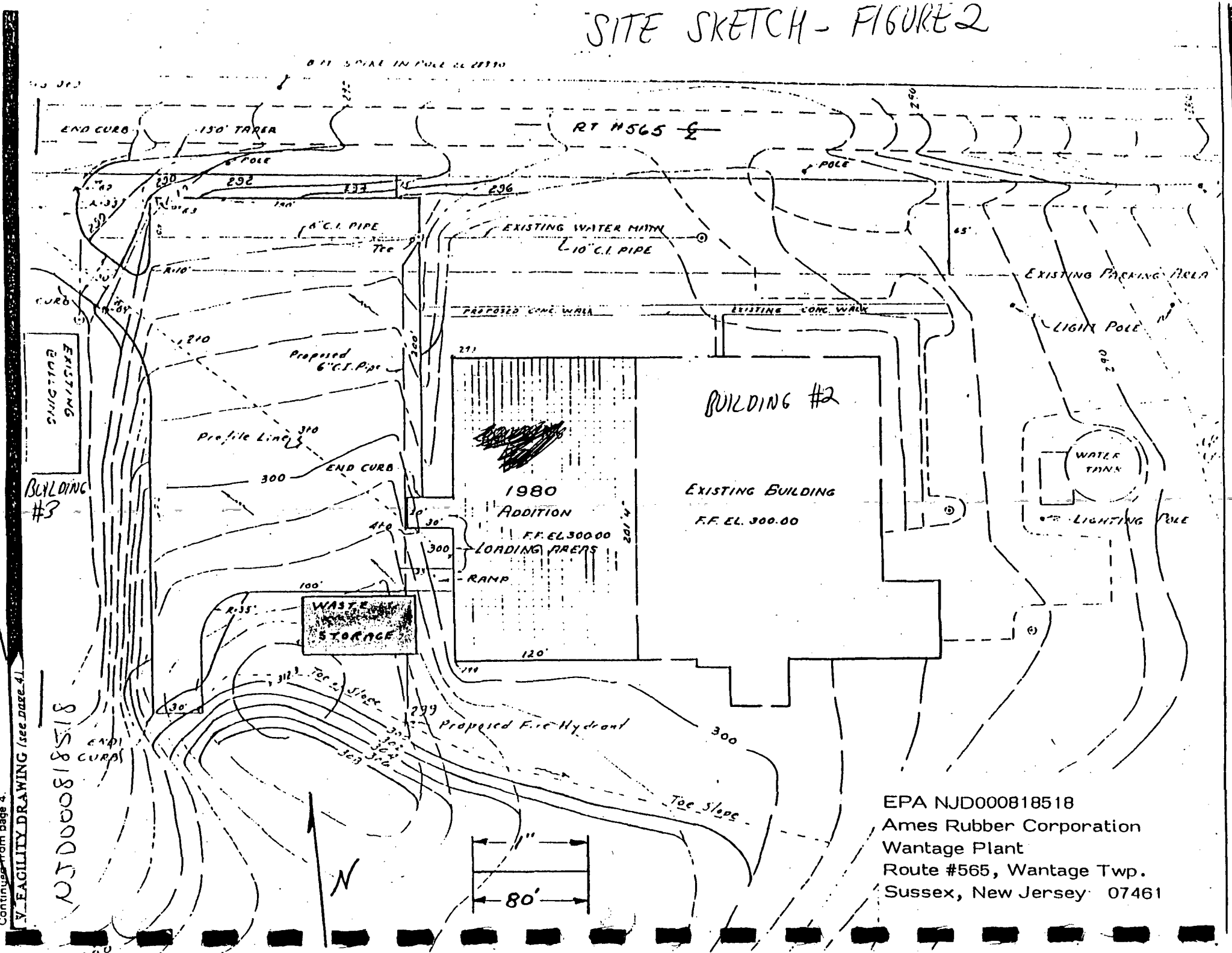
A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
ARNOLD E. WRIGHT / VICE PRES., MANUFACTURING	Arnold E Wright	11/19/80

COMMENTS FOR OFFICIAL USE ONLY

EPA Form 3510-1 (6-80) REVERSE

Form Approved OMB No. 158-S80004

SITE SKETCH - FIGURE 2



EPA NJD000818518
Ames Rubber Corporation
Wantage Plant
Route #565, Wantage Twp.
Sussex, New Jersey 07461

REFERENCE NO. 10

GEOLOGY and GROUND WATER RESOURCES of SUSSEX COUNTY and the WARREN COUNTY PORTION of the TOCKS ISLAND IMPACT AREA

by

JOSEPH W. MILLER, JR.
Principal Geologist

STATE OF NEW JERSEY
BRENDAN T. BYRNE, *Governor*

Department of Environmental Protection
DAVID J. BARDIN, *Commissioner*

Division of Water Resources
GEORGE C. FRIEDEL, *Acting Director*

Bureau of Geology and Topography
Kemble Widmer, *State Geologist*

January 1974

Bureau of Geology and Topography
BULLETIN 73

GEOLOGY and GROUND WATER RESOURCES of SUSSEX COUNTY and the WARREN COUNTY PORTION of the TOCKS ISLAND IMPACT AREA

Department of Environmental Protection

Division of Water Resources

BULLETIN 73

Bureau of Geology and Topography

ABSTRACT

Sussex County and the Warren County portion of the Tocks Island Impact Area are primarily agricultural. Commercial, industrial and resort developments are occurring at an increasingly rapid rate.

Ground water supplies approximately 60% of the estimated daily water consumption. Water utilities furnish the balance with surface water or a combination of ground water and surface water. Most of the ground water is obtained from rock wells; only a small percentage of the wells are located in unconsolidated Pleistocene deposits.

Over 3,000 records of domestic, industrial and public supply wells were examined and are included in the report. The interpretations and conclusions presented are based on these driller's records which, although not precise or complete, give a good indication of reasonable expectations of depth and yield for each formation.

There are no known areas where ground water levels have declined because of over pumping. Domestic supplies may be developed almost anywhere in the study area. Moderate to large supplies can generally be developed from wells located in stratified drift, in cavernous members of the Kittatinny Formation and in shear zones near faults. Wells completed in the Precambrian crystallines, in the non-cavernous members of the Kittatinny Formation, and in the Martinsburg Formation usually will have very low yields: between 36 to 47% will have yields of 5 gpm or less.

The quality of ground water is generally good for most uses. Locally, the water will have to be treated for hardness, low pH, high iron content and high SO_4.

ACKNOWLEDGMENTS

This report was prepared under the general supervision of Kemble Widmer, State Geologist of New Jersey, who provided guidance and invaluable counsel and advice.

The author is indebted to numerous organizations, industries and individuals who provided data for this report. The following geologists from the New Jersey Geological survey made contributions to this report: Haig F. Kasabach prepared the Geologic Map, supervised the preparation of the Base Map, and plotted a good portion of the wells on the Well Location Map. The text follows the format of his Geology and Ground Water Resources of Hunterdon County, N. J. Carol Lucey assisted in the well tabulations, proofreading and editing the text. Frank Markewicz provided much valuable information pertaining to the geology of the counties and revised the Precambrian and Paleozoic geology in several areas; his description is used in the breakdown of the Kittatinny Formation and he critically reviewed the chapter on geology and the Geologic Map. Mr. George Banino also critically reviewed this report.

The United States Geological Survey at Trenton provided base flow data for the major watersheds. Mr. Donald Dunlap of the United States Weather Bureau in New Brunswick provided the climatological data. The Bureau of Water Control, in the Department of Environmental Protection, furnished most of the water consumption data. The New Jersey Department of Health furnished the chemical analyses of the Public Water Supplies. Mrs. Gladys W. Ellsworth, Chief, Bureau of Research and Statistics, Division of Economic Development, Department of Labor and Industry, furnished the population data. Mr. J. L. Baum furnished bedrock data in the Franklin, Hamburg, McAfee and Ogdensburg areas.

Special acknowledgment is extended to Miss Beverly Birban and Mrs. Dorene Sarnoski for their care and patience in typing this report; to Mr. George Caruso, who drafted most of the plates and illustrations; and to Mr. John Kremper, who finished the drafting.

CONTENTS

ILLUSTRATIONS

by Markewicz and Dalton in Sussex and Warren Counties. The following breakdown is from Markewicz (1969).

Leithsville Formation

The Lower Cambrian Leithsville Formation is a massive, medium to fine-grained, impure, calcareous dolomite, commonly referred to as "dolomite limestone". Locally it can be coarsely crystalline and very massive.

Basal Leithsville can consist of massive, thick bedded, very dark dolomite or bluish gray, fine to medium grained dolomite in beds from one to three feet thick with some minor thin shaley interbeds. Weathered surfaces are gray to dark gray. Fresh rock is bluish to dark gray with local units almost black. Chert, often present in some basal units, is usually associated with the thinner bedded dolomite. This dark lower unit has yielded specimens of the fossil *Hyolithellus-micans.*

Above the basal beds the Leithsville tends to be lighter colored on both weathered and fresh exposures. It is medium bedded to locally laminated with calcareous shale and tan micaceous shale interbeds, which weather yellowish. Above this the dolomite becomes medium to thick bedded with occasional chert and sandy beds.

Mud cracks, coarse-bedding, chert nodules, edgewise conglomerate and horizons of oolitic and pisolitic structure have been observed in the upper section. The formation appears to be about 1,000 feet thick (Drake and others, 1967).

Allentown Formation

It is a thick (1,300 ft. +) Markewicz, (1969) rhythmically bedded, light to dark gray, fine to medium grained, crystalline, impure dolomite in beds from several inches to more than three feet thick. Weathered rock is light gray to dark gray with a fine to smooth textured surface.

The lower half of the formation is an alternating sequence of light to dark thin bedded dolomite with intercalated shaley bands. Thin, undalatory, dark, medium to coarse grained, impure dolomitic and oolitic beds are common. These beds may give off a light to strong foul odor when struck with a hammer. Stromatolites, oolites, chert lenses, ripple marks, cut and fill structure, edgewise conglomerate and sedimentary breccia are common.

Upper Allentown is generally thicker bedded with scattered thin beds that weather to a very smooth textured, cream colored surface. Chert is more abundant and stromatolites, oolites, shaley beds, ripple marks and sedimentary breccia are less abundant as compared to the lower part.

Rickenbach Formation

The Lower Rickenbach (700 ft. +) Markewicz, (1969) consists of gray to dark gray, fine to coarse crystalline rock that sparkles on the fresh surface. Basal beds are massive with local thin shaley beds. Chert occurs as spotty, discontinuous thin beds and lenses. When struck with a hammer, basal beds emit a very fetid odor.

Upper beds become finer grained, less crystalline, lighter colored and more thinly bedded with some calcareous sandstone and occasional dolomite beds containing frosted quartz grains and scattered smokey calcite crystal clusters. The offensive odor is not as strong. Chert becomes more abundant as nodules and thin bands.

Epler Formation

The Epler Formation (800 ft. +) Markewicz, (1969) is an interbedded, very fine grained to cryptogranular, light to medium gray limestone and fine to medium grained, light to dark, medium gray dolomite. Nodular and bedded chert are common and there is a prominent chert rich zone near the base.

Hydrology

The Kittatinny Formation has no primary porosity and ground water has to move through joints, fractures and solution cavities within the rock. Carbonate rocks differ from other consolidated rocks because they are relatively soluble in weak acid solutions. Rain falling through the atmosphere picks up carbon dioxide and forms a weak carbonic acid. Water percolating downward through the soil picks up additional carbonic acid and weak organic acids. This weak acid solution then percolates down through joints and fractures, slowly dissolving the limestone until large channels and caverns are formed.

Solution channels are usually more abundant in valleys, depressions, and near streams and rivers. The distribution of the channels is extremely irregular, and usually is difficult to predict. However, sinkholes, funnel shaped depressions in the land surface, are usually connected with large solution channels in the underlying limestone. A series of sinkholes may be aligned along an underground cavern. A well drilled on this line would have a good chance of intercepting a cavern and could produce a large quantity of water. Many of the solution channels are more or less filled with clay but with prolonged pumping an excellent well can be developed. On the other hand, wells which encounter relatively unfractured limestone or dolomite will have low yields.

Faults which may contain large quantities of water in other consolidated non-porous rocks are generally tight in the Kittatinny Limestone. The recemented breccia, mylonite and recrystallized rock in the fault proper are frequently harder and better cemented than the surrounding rock and often form a slightly higher ridge in the terrain. However, the unbrecciated limestone adjacent to the fault is usually more fractured than the normal unfractured limestone elsewhere. These numerous fractures tend to become enlarged by ground water and form sizeable solution channels and caverns.

Ground water in the Kittatinny Formation is found under both water-table and semi-artesian conditions. Water table conditions exist near the ground surface and semi-artesian conditions occur in some of the deeper solution channels, which are recharged through sinkholes or water table aquifers. Because the solution channels are usually quite irregular, two neighboring high-capacity wells may tap different solution channels and not interfere with each other at all. However, two high yielding wells on the same system would rapidly transmit the effect of pumping over considerable distances with a consequent increase in drawdown.

Most successful wells have intersected large caverns between 50 and 300 feet. Below 600 feet the chances of obtaining a good supply from the Kittatinny Formation is generally slight, although there have been exceptions in areas not covered by this report.

Wells drilled in either the Rickenbach or Leithsville Formation would be much more apt to intersect solution channels than those drilled in the Epler or Allentown Formations Dalton, (1969).

Reported yields from 422 domestic wells, pumping from the Kittatinny Formation, range from ¼ to 120 gpm with an average of 14 gpm. Thirty-five percent yielded 5 gpm or less. Fifteen percent yield between 16 and 25 gpm. Fourteen percent yield between 26 and 79 gpm. Three wells yield 100 gpm and two wells yield 120 gpm.

Yields from the 32 industrial wells range from a minimum of 18 gpm to a maximum of 815 gpm, with an average of 162 gpm and median of 100 gpm. Forty-one percent yielded less than 100 gpm. Thirty-four percent yielded between 200 and 299 gpm. Nine percent yielded over 300 gpm.

Specific capacities of 273 domestic Kittatinny Formation wells range from .00 to 3.11 gpm per foot of drawdown and averaged 1.05 gpm per foot of drawdown. Specific capacities for 26 industrial Kittatinny Formation wells range from .08 to 33.95 gpm per foot of drawdown and averaged 4.40 gpm per foot of drawdown. Eight wells had a specific capacity of infinity and six wells had a specific capacity of .00 gpm per foot of drawdown.

ORDOVICIAN

JACKSONBURG LIMESTONE

Geology

The Jacksonburg Limestone rests unconformably on the Epler Formation (upper member of the Kittatinny Formation). It is a black or dark blue limestone often with dolomite pebbles at the base, and limy shale (cement rock) at the top. "The thickness of the Jacksonburg varies greatly in New Jersey. It probably is between 125-300 feet thick." Kummeel (1940).

Hydrology

There are too few wells drawing from the Jacksonburg Limestone to summarize.

MARTINSBURG FORMATION

Geology

The Martinsburg Formation lies unconformably on the Jacksonburg Limestone. It is the most extensive formation in the Valley and Ridge Province. It is seven miles wide at the New York State Line. It is an intensely crumpled and faulted sequence of shale, slate, sandstone and calcareous siltstone. On the whole, the fine grained shale and slate are black and are more abundant in the lower part, whereas the sandstone beds are dark bluish gray, many of them calcareous, and occur more commonly higher in the formation. Estimates of the thickness of the formation vary from 5,000 to 11,000 feet. Kummel, (1940).

Hydrology

The Martinsburg Formation has no primary porosity or permeability except in some of the sandstones and calcareous sandstone beds. They are described by one well driller as "honey comb rock." Nearly all the ground water is contained in fractures.

In the Appalachian Valley and Ridge Province of Sussex and Warren Counties the fractures in the Martinsburg seem to be quite tight and it is, on the whole, a very poor aquifer. Ground water occurs under water-table conditions except in some of the deeper wells where water may be semi-confined in sandstone, limestone, a more permeable shale horizon, or a fault shear zone.

Of the 919 domestic wells, only 495 have sufficient pumping data to summarize. The reported yields range from ½ gpm to 120 gpm with an average of 10½ gpm, and a median of 6 gpm. The specific capacities range from .00 to 20.00 gpm per foot of drawdown with an average of .39 gpm per foot of drawdown. Six wells had a specific capacity of infinity and twelve wells have a specific capacity of .00 gpm per foot of drawdown. Forty-seven percent yielded 5 gpm or less. Thirty-five percent yielded between 6 and 15 gpm. Nine percent yielded between 16 and 25 gpm. Eight percent yielded between 26 and 75 gpm. One percent yielded between 100 and 120 gpm.

Of the 20 industrial wells, only 12 had sufficient pumping data to summarize. The reported yields range from 109 to 6.25 gpm per foot of drawdown with an average of 1.22 gpm per foot of drawdown. Fifty-three percent yielded 40 gpm or less. One well yields 45 gpm: three wells yield 50 gpm; one well yields 75 gpm and one well yields 220 gpm.

The reported depths of the 919 domestic wells range from 35 feet to a maximum of 683 feet. The average is 169 feet and the median is 132 feet. Fifty-one percent were shallower than 149 feet. Thirty-two percent ranged between 250 and 299 feet deep, and the balance, or 9%, are 300+ feet deep.

The reported depths of the industrial wells range from 178 to a maximum of 833 feet. The average depth is 333 feet and the median is 304 feet. Thirty-three percent of the industrial wells range between 200 and 299 feet deep; 26% range between 300 and 399 feet deep and the balance were 400+ feet deep.

Most successful wells in the Martinsburg Formation are in the weathered zone within 200 feet of the surface. Depths of wells are completely unpredictable.

NEPHELINE SYENITE

Geology

The Beemerville Nepheline Syenite is perhaps the largest intrusive body of its type in the eastern United States. There are several facies, all with abundant nephelite, but with textures varying from coarsely granular to fine grained tinguaite. The tinguaite occurs as small dike-like bodies cutting the granular and porphyritic types of nephelite syenite Milton (1952). It is further described by Wilkerson (1946) and Kemp (1892).

There are numerous dikes (mostly unmapped) and several volcanic plugs, the largest being Rutan Hill.

Hydrology

The Nepheline Syenite and its accompanying dikes and volcanic plugs are insignificant as far as ground water is concerned.

MARTINSBURG HORNFELS

Geology

The Martinsburg Hornfels was formed when the Beemerville Nepheline Syenite and its associated dikes intruded and metamorphosed the Martinsburg Shale in Wantage Township, Sussex County. It is a dense, fine-grained dark gray to black rock, and extends 2,000± feet from the intrusive body (Spink, 1967).

Drillers' Logs of Wells, Walpack Township
(Depths below land surface are given in feet)

Well #	Depth	Log	Formation
5	15-52	Gray quartzite	Ssg
	-58	Same	
	-76	Hard, gray quartzite and interbedded red shale	
	-83	Fine-grained, sea green and dull red quartzite	
	-90	Very fine-grained, dull red quartzite	
	-99	Fine-grained light green quartzite	
	-101	Rusty brown quartzite, nearly all grains coated with limonite	
	-114	Fine-grained, light brown quartzite	
6	0-47	Glacial drift	
	-116	Soft limestone	Spi-Do
7	0-105	Sand and gravel	Qal
8	0-105	Red clay	
	-117	Gravel and sand	
	-125	Lime rock	Spi-Do
11	0-8	Dirt	
	-150	Limestone	Don
16	0-4	Overburden	
	-108	Hard limestone	Don
	-120	Soft, brown sandstone	
21	0-221	Conglomerate of white quartz. pebbles in red to bluish matrix	Ssg
23	0-25	Shale	
	-300	Conglomerate of white quartz. pebbles in red to bluish matrix	Ssg
25	0-20	Red shale and sandstone	Shf
	-60	Pinkish shale and sandstone	
	-80	Red sandstone	
	-100	Pinkish sandstone	
	-120	Fine-grained yellow-brown sandstone	
	-150	Blue shale	
	-180	Brown-gray shale	
	-197	Light gray, fine-grained shale	
38	0-8	Hardpan and cobbles	
	-58	Red sandstone	Shf
	-82	Gray sandstone	
	-103	Red sandstone	
	-127	Gray sandstone	
	-152	Red sandstone	
38	-171	Brown sandstone	
	-187	Red sandstone	
	-265	Gray sandstone, very hard	
	-277	Brown sandstone, very soft	
	-285	Gray sandstone, very hard	Ssg
39	0-34	Glacial drift with boulders	
	-125	Brown sandstone	Shf
40	0-3	Overburden	
	-110	Red sandstone	Shf
43	0-150	Clay, gravel and boulders	
	-195	Red rock	Shf?
44	0-104	Sand, gravel and boulders	
	-170	Gray sandstone	Shf?
45	0-3	Overburden	
	-20	Red shale	Shf
	-398	Gray rock	Ssg?
46	0-21	Overburden	
	-147	Gray rock	Ssg?
47	0-21	Overburden	
	-320	Red rock (sandstone?)	Shf
48	0-5	Overburden	
	-160	Alternating bands of quartzite and shale	Shf
49	0-5	Overburden	
	-245	Alternating bands of quartzite and shale	Shf
50	0-7	Overburden	
	-8	Black-white sandstone	Shf
	-25	Black-gray sandstone	
	-82	Shale	
	-85	Brown sandstone	
	-100	Gray sandstone	
	-130	Brown-white sandstone	
	-140	Shale	
51	0-2	Overburden	
	-25	Red sandstone	Shf
	-190	Hard sandstone	
52	0-5	Overburden	
	-68	Red shale	Shf
	-91	Hard sandstone	
	-100	Red shale	
	-298	Hard sandstone	

WANTAGE TOWNSHIP (Including SUSSEX)

DOMESTIC WELLS [1]

YIELD IN GALLONS PER MINUTE

Formation	*No. of Wells*	*Maximum*	*Minimum*	*Average*	*Median*
Martinsburg Hornfels (Ombh)	12	18	1	5½	3
Martinsburg Formation (Omb)	257	100	½	10	5
Kittatinny Formation (C0k)	15	50	2	18	15

DEPTH IN FEET BELOW SURFACE

Formation	*No. of Wells*	*Maximum*	*Minimum*	*Average*	*Median*
Martinsburg Hornfels (Ombh)	12	273	104	179	173
Martinsburg Formation (Omb)	257	698	55	182	152
Kittatinny Formation (C0k)	15	359	63	158	137

[1] Wells and formations with insufficient data are not summarized.

WANTAGE TOWNSHIP (Including SUSSEX)

INDUSTRIAL WELLS [2]

YIELD IN GALLONS PER MINUTE

Formation	No. of Wells	Maximum	Minimum	Average	Median
Martinsburg Formation (Omb)	9	50	2	31	33

DEPTH IN FEET BELOW SURFACE

Formation	No. of Wells	Maximum	Minimum	Average	Median
Martinsburg Formation (Omb)	9	833	206	394	311

[2] There is 1 additional industrial well from the Kittatinny Formation. See regional summary of industrial wells.

Well No.	Owner	Year Drilled	Casing Dia. (in.)	Yield (gpm)	Depth (ft.)	FORMATION	Screen Setting or depth csd. (ft.)	Static Water Level (ft.)	Pumping Level hrs Pumped	Depth to Bedrock	USE
1	R. Nichling	1952	6	36	84	Omb	24	8	9,2	0	
2	W. Ayers	1952	6	7	99	"	32	12			
3	F. Hughes	1948	6	10	104	Ombh	49	17	90 1	49	
4	K. Leonhardt	1949	6	9	122	"	58	29	50 1	58	
5	S. Kessler	1948	6	18	112	"	76	63	95/1	76	
6	L. Howell	1951	6	10	35	Omb	20	12	25 1	20	
7	M. Haggerty	1948	6	4	181	"	106	75	103/1	106	
8	L. Banghart	1951	6	5	47	"	17	7	41 1	17	
9	L. Carr	1949	6	20	140	"	18	5	40 8		
10	A. Maroldi	1952	6	15	66	"	23	7	20 2		
11	R. Edsell	1951	6	1	218	"	8	54	200 1		
12	C. Gilliken	1953	6	1	250	"	20	15	240 8		
13	B. Wilson	1953	6	6	82	"	20				
14	C. D. Becker	1949	6	1	290	"	19	37	bottom	18	
15	J. Tierney	1948	6	½	132	"	30	14	bottom	30	
16	W. G. Friend	1951	6	1½	346	"	3	2	100 1	3	
17	S. Retz	1953	6	12	94	"	Deepened	24			
18	Simmons Realty Co. #3	1950	6	17	150	"	58	26	80 2	55	
19	B. Repsher #2	1952	6	10	110	"	13	52	80 2	10	
20	E. Bishop	1953	8	21½	223	"	12	28	85 6		
21	S. Mikrut	1953	6	20	84	"	30	24	25 2	27	
22	C. W. Brownell Co. #2	1951	6	30	36	Qsd	36	5	5 2		
23	J. Todd, Jr.	1948	6	2	272	Oml	52	47	65 1	52	
24	E. Johnson	1948	6	2	120	"	54	23	40 1	54	
25	A. Rizzo	1953	6	35	75	COk	24	8	8 2		
26	American Tel. & Tel. Co.	1959	6	45	500	Omb	28	31			1
27	" " " " "	1959	6	15	500	"	21	131½			1
28	E. Denman, Sr.	1964	6	1½	413	"	30	15	350 2		
29	K. Boyd	1954	6	10	95	"	12	flows 5 gpm		0	
30	W. Hill	1965	6	8	80	"	31	10	60 2		
31	M. Cicerale	1964	6	10	90	"	20	5	60 2		
32	L. Wojcik	1965	6	10	135	"	30	4	80 2		
33	R. Sanders	1966	6	6	73	"	14	2	60 2		
34	V. Rome	1964	6	12	94	"	21	40	90 2		
35	G. Titus	1961	6	1	104	"	26	23			
36	J. Thompson	1961	6	20	165	"	29	1			
37	L. Green	1962	6	2	84	"	22	17			
38	J. Vernie	1961	6	1	186	"	20	42			
39	Ridge Runners Gun Club, Inc.	1959	6	1	108	Ssg	15	10			
40	Dairy Research Center	1964	6	1	297	Omb	30	23	200 2		
41	H. Prins	1962	6	1	125	"	35	23			
42	R. Abrazinskas	1965	6	5	83	"	17	19			
43	R. Ayers	1965	6	3	173	Ombh	24	14	160 2		
44	R. Frey	1966	6	18	95	Omb	28	20	28 2		
45	J. Sailer	1965	6	10	122	Ombh	67	14	60 2		
46	H. Phillips, Jr.	1964	6	1½	221	"	23	20	160 2		
47	D. Keasler	1966	6	1½	247	"	30	12	210 2		
47A	Cooperative Loan & Savings Society	1967	6	6	203	"	42	19	180 5		

WANTAGE TOWNSHIP (Including SUSSEX)

Well No.	Owner	Year Drilled	Csg. dia. (in.)	Yield (gpm)	Depth (ft.)	FORMATION	Screen Setting or depth csd. (ft.)	Static Water Level (ft.)	Pumping Level/hrs. Pumped	Depth to Bedrock	USE
48	J. Lordy	1964	6	3	150	Ombh	19	17			
49	H. Zabrowski	1966	6	1½	273	"	30	26	210/2		
50	I. Vreeland	1961	6	2	146	Olk	20	62			
51	W. Card	1966	6	2	195	Ombh	121	50			
52	W. Pfitzenmayer	1966	6	1	249	"	18	19			
53	H. Haggerty	1965	6	15	210	Omb	25	15	120/2		
54	G. Christy	1957	6	2	225	"	27	19			
55	W. Haggerty	1966	6	10	66	"	42	24			
56	G. Frauenpries	1962	6	2	258	"	146	22	200/2		
57	Rutgers Univ. Research Farm	1964	6	50	152	"	45	6	100/2		
58	Rutgers Univ. Research Farm	1961	6	5	101	"	37	7			
59	R. Burse	1964	6	2	338	"	47	50	300/2		
60	R. Ayers	1956	6	6	83	Omb & dike	19	17	70/2		
61	O. Venden Heuvel	1964	6	2	283	Omb	21	15			
62	Beemerville Fire Co.	1956	6	25	60	"	27	5	20/1	50	
63	Space Farms	1966	6	4	97	"	32	14	60/2		
64	" "	1966	6	35	147	"	26	20	100/2		
65	First Presbyt. Church	1958	6	1½	166	"	19½	15			
66	R. Beamer, Jr.	1964	6	5	95	"	28	12			
67	M. Crowell	1956	6	2½	254	"	154	33			
68	W. Systema	1963	6	2½	309	"	100	25			
69	N. Skellenger	1963	6	5	165	"	23	4			
70	C. Longcar	1964	6	12	50	"	23½	11	20/2		
71	C. Petrolevitch	1964	6	12	58	"	20	5	40/2		
72	H. Chapin	1964	6	15	105	"	23	13			
73	G. Schineller	1964	6	4	123	"	52	9	80/2		
74	R. Slate	1964	6	3	198	"	20	6	180/2		
75	J. Kaweska	1966	6	4	172	"	162	2	105/2		
76	W. Aboto	1951	6	1	146	"	35	10			
77	L. Coykendall	1964	6	8	98	"	21	5	60/2		
78	W. Viet	1963	6	7	195	"	73	25			
79	J. Berry	1965	6	2	185	"	101	2	160/2		
80	A. Chase	1965	6	12	197	"	23	10	100/2		
81	H. VanHorn	1965	6	2	124	"	21	32			
82	M. Coyhendal	1965	6	24	72	"	25	18	44/3	12	
83	R. Harde	1965	6	15	72	"	39	5	60/2		
84	C. Rome	1963	6	3	265	"	17	44			
85	C. Albright	1964	6	150	90	Qad & Omb	90	4	20/2		
86	Jim-B-Farms	1965	6	3	317	Omb	20	8	300/2		
87	R. Fuller	1965	6	4	78	"	13	15			
88	H. Brink	1965	6	12	156	"	17	24	100/2		
89	C. Albright #2	1964	6	60	70	Qad & Omb	70	24	20/2		
90	F. Huback, Jr.	1964	6	8	108	Omb	24	15			
91	C. Westdyke	1964	6	5	66	"	21	20	50/2		
92	C. Raye	1965	6	6	397	"	35	67	300/2		
93	R. Tuma	1962	6	30	145	"	25	15			
94	D. Bruker	1965	6	½	273	"	21	10	200/2		
95	E. McGraw, Jr.	1964	6	2	298	"	10	13	280/2		
96	T. Ryan, Jr.	1962	6	1	167	"	28	25			
97	E. Christensen	1965	6	20	92	"	17	5			
98	F. Dailey	1963	6	2	325	"	21	16			
99	E. Link	1965	6	6	97	"	19	10	80/2		
100	L. Bedell	1964	6	2	130	"	25	20	120/2		
101	D. Richelshagen	1965	6	1	197	"	12	20	190/2		
102	P. Compton	1966	6	8	260	"	20	40	150/2		
103	A. Seideman	1966	6	15	210	"	6	20	80/2		
104	M. Jones #2	1955	6	8	250	"	81	30	110/		
105	G. Schwarz	1965	6	14	142	"	82	32	122/2	58	
						Fault?					

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WANTAGE TOWNSHIP (Including SUSSEX)

Well No.	Owner	Year Drilled	Cas. dia. (in.)	Yield (gpm)	Depth (ft.)	FORMATION	Screen Setting or depth csd. (ft.)	Static Water Level (ft.)	Pumping Level/hrs Pumped	Depth to Bedrock	USE
106	L. Klaus	1965	6	40	172	Omb Fault?	106	6	80 2		
107	J. Aglialoro	1966	6	1	222	Omb	150	55	210 2		
108	John Turpin	1967	6	1	479	"	21	56	300/2		
109	C. Feenstra	1965	6	14	155	Qsd	155	57			
110	J. Desmarais	1965	6	1½	246	Omb	50	32	210/2		
111	M. Faul	1965	6	2	247	"	44	9	200/2		
112	S. Heinlein	1961	6	2	698	"	24	32	620 3	12	
113	L. Struble #2	1958	6	11	360	"	28	9½	130		
114	Simmons Realty Company	1965	6	2	297	"	21	16	280/2		
115	" " "	1965	6	2	297	"	21	22	280 2		
116	H. France	1964	6	4	257	"	40	20	150/2		
117	A. Moraldi, Sr.	1959	6	3	309	"	22	10	bottom		
118	L. Carr	1966	6	5	146	"	32	17	100/2		
119	A. Hutting	1965	6	5	155	"	23	27			
120	Klip & Kurl Beauty Salon	1965	6	1½	297	"	21	15	210/2		
121	B. Paugh	1965	6	12	67	"	67	11	55/2		
122	E. Johnson	1964	6	3	475	"	21	30	460/2		
123	A. Klim	1966	6	2½	683	"	19	3	300 2		
124	J. Noonan	1966	6	6½	122	"	51	18	100 2		
125	C. Lott	1964	6	2½	80	"	17	3			
126	M. Willson	1965	6	1	310	"	27	16			
127	R. Struble	1964	6	7	289	"	22	34	120 2		
128	A. Baker	1964	6	3	247	"	21	25	200 2		
129	L. Willson, Jr.	1964	6	½	295	"	27	50			
130	G. Zimba	1966	6	3	222	"	22	18	200 2		
131	J. Rush	1965	6	4	216	"	57	60	216 2	57	
132	H. Carr	1965	6	15	215	"	28	25	90 2		
133	E. Turner	1965	6	1½	342	"	17	16	300 2		
134	O. Peckham	1965	6	2	144	"	46	51			
135	B. Brink	1965	6	7	72	"	21	10	50/2		
136	M. Smith	1966	6	4½	173	"	18	48	105 2		
137	D. Simmons	1960	6	30	206	"	23	11			
138	J. Illaria	1962	6	2½	145	"	29	22			
139	J. Sipley	1962	6	8	157	"	21	5	50 2		
140	R. Pluymers	1966	6	1½	235	"	30	16	210/2		
141	J. Rannon	1966	6	7	98	"	13	30	80 2		
142	W. Gutowski	1962	6	3	145	"	41	27			
143	M. Bombara	1963	6	5	224	"	99	21			
144	N. Van Horn	1963	6	2	100	"	28	20			
145	S. Nemeth	1964	6	5	278	"	182	62	266	170	
146	A. Kaczkowski	1965	6	8½	136	"	60	14	100/2		
147	B. VandenBerg	1966	6	1½	271	"	10	26	210 2		
148	F. Rite	1964	6	3	50	"	23	6	15/2		
149	Cre-Art Corp.	1966	6	20	122	"	81	21	85/2		
150	R. E. Baldwin	1966	6	6	335	"	90	20	220 2	90	
151	H. Rome	1962	6	6	120	"	70	29			
152	C. Rome	1962	6	6	135	"	83	37			
153	R. Van Arden	1964	6	9	130	"	90	46	120 2		
154	H. Rome	1963	6	4	137	"	71	37			
155	W. Smith	1964	6	10	170	"	50	65	135 2		
156	L. Cash	1966	6	10	75	"	63	16	50/2		
157	J. Perovich	1966	6	2	297	"	50	42	210 2		
158	V. Cartabona	1964	6	1½	257	"	50	53	200 2		
159	R. Howell	1958	6	6	289	"	62	12			
160	J. Clouse	1965	6	10	145	"	70	29			
161	W. Chasmar	1962	6	10	104	"	25	20			
162	G. Rome, Sr.	1964	6	30	50	"	45	24	30 2		
163	Sussex Co. Bd. of Freeholders-Wantage Twp. Garage	1965	6	60	147	"	42	10	80 2		
164	G. Ferretti	1964	6	6	61	"	18	15			
165	W. Chasmar	1964	6	2½	85	"	43	8			

WANTAGE TOWNSHIP (Including SUSSEX)

Well No.	Owner	Year Drilled	Cas. dia. (in.)	Yield (gpm)	Depth (ft.)	FORMATION	Screen Setting or depth csd. (ft.)	Static Water Level (ft.)	Pumping Level/hrs. Pumped	Depth to Bedrock	USE
166	J. Healey	1964	6	30	115	Omb	58	4	50/2		
167	Delgrosso Bros., Inc.	1964	6	½	240	"	20	86			
168	J. Cillarto	1965	6	75	297	"	20	28	200/2		
169	St. Cloud Bldg. Corp.	1958	8	35	833	"	42	50	300/6		I
170	S. Hymes	1964	6	50	130	"	50	74	90/2		
171	Estey Corp.	1963	6	5	371	"	20	15			
172	Simmons Realty Co. #1	1960	8	2	294	"	25	49			I
173	" " " #2	19..	8	30	206	"	23	11			I
174	C. Sartell	1964	6	35	58	"	35	7	35/2		
175	M. Drake	1964	6	30	94	"	21	6	40/2		
176	E. Decker	1964	6	5	164	"	20	14			
177	Udemac, Inc.	1966	6	4	249	"	32				
178	Ideal Farms, Inc.	1954	6	50	313	"	40	10	95/1		I
179	W. Decker	1962	6	20	176	"	29	21	30/2		
180	G. Moore	1962	6	2	268	"	104	110			
181	J. Jaeger	1964	6	4	135	"	42	9	90/2		
182	M & B Havens	1966	6	1½	323	"	25	18	300/2		
183	B. Havens	1966	6	1½	273	"	20	18	210/2		
184	J. Cosh	1964	6	4	95	"	18	10			
185	E. Katterman	1965	6	30	103	"	22	10	50/2		
186	E. Brislin	1964	6	5	172	"	11	14	150/2		
187	P. O'Biso	1965	6	8	104	"	29	15			
188	High Point Regional High School	1965	8	50	308	"	30	33	250/24		I
189	E. Oliva	1962	6	5	115	"	59	12	90/2		
190	M. Edsall	1965	6	4	97	"	45	32	80/2		
191	Roy Farms, Inc.	1964	6	5	135	"	61	29	90/2		
192	G. Williams	1963	6	20	75	"	19	10			
193	Northern N. J. Bldrs.	1966	6	3	248	"	50	4	180/2		
194	" " " "	1962	6	6	84	"	25	21			
195	" " " "	1966	6	5	270	"	51	45	180/2		
196	J. Moore	1965	6	100	65	"	52	14	40/2		
197	D. Elston	1964	6	100	68	"	57	16	40/2		
198	F. Shields	1964	6	4	82	"	35	21			
199	H. Grohman	1966	6	25	152	"	25	12	85/2		
200	H. Elliott	1966	6	1	396	"	31	26	380/2		
201	W. Scholl	1964	6	2½	172	"	39	11	150/2		
202	W. Stires	1962	6	3½	135	"	23	15			
203	O. Krueger	1954	6	2	200	"	32	13			
204	R. Textor	1956	6	10	90	"	27	15	70/2		
205	P. Grau	1965	6	10	56	"	39	20	45/2		
206	D. Burger	1966	6	20	85	"	17	11	60/2		
207	Dunn & Dunn, Inc.	1966	8	37	326	"	65	8	150/2		I
208	R. Ross	1966	6	1	305	"	38	10	210/2		
209	N. Kemble	1965	6	10	273	Cok	32	74	210/2		
210	D. DeKorte	1963	6	10	125	Ojb	28	45			
211	F. Ackerman	1964	6	5	147	Cok	20	30	135/2		
212	R. Pillar	1965	6	30	115	"	11	46	55/2		
213	W. Boynton	1963	6	12	158	"	45	61	111/3	25	
214	Sussex Redi-Mix Co.	1966	6	5	480	Omb	44	24	300/2		
215	W. Todd	1962	6	18	128	Cok	46	36	65/3	25	
216	A. Weemstra	1966	6	2½	255	Omb	22	20	225/2		
217	A. Ferris	1963	6	4½	145	"	20	9			
218	E. Todd	1964	6	5	106	Cok	20	49	120/2		
219	Holland Amer. Bakery	1964	6	22	90	"	22	4½	40/2		
220	M. L. Willson	1955	6	24	359	"	40	30			
221	Mar-Mon Corp.	1955	6	20	116	"	33	3	3½/2		
222	" " "	1966	6	4	173	"	43	17	160/2		
223	T. Rome	1962	6	20	63	"	20	23			
224	F. Henderson	1964	6	2	196	"	20	45	180/2		
225	P. Bisak	1965	6	40	228	"	51	10	70/2		
226	Sussex Motel, Inc.	1964	6	250	148	"	22	15	120/2		I
227	Wantage Corp.	1959	8	15	262	Omb	31	20	180/6	11	I

WANTAGE TOWNSHIP (Including SUSSEX)

LAKE NEEPAULIN (228-300)

Well No.	Owner	Year Drilled	Casing dia. (in.)	Yield (gpm)	Depth (ft.)	FORMATION	Screen Setting or depth csd. (ft.)	Static Water Level (ft.)	Pumping Level (ft.) Pumped	Depth to Bedrock	USE
228	P. Kunz	1962	6	5	338	Omb	50	44			
229	F. Vitale	1958	6	1	289	"	50	162			
230	R. Spooner	1959	6	10	308	"	50	173			
231	H. Klemm	1959	6	1	289	"	50	123	280		
232	F. Castagna	1958	6	3	209	"	50	90			
233	E. Gordon	1962	6	20	84	"	50	28			
234	W. Wesserling	1962	6	1	310	"	50	46			
235	L. Guelpa	1959	6	1	289	"	50	104			
236	J. Zapolski	1959	6	8	84	"	50	23			
237	P. Manzi	1955	6	5	81	"	13	12			
238	T. Nolan	1960	6	1½	269	"	50	103	bottom		
239	H. Murray	1965	6	25	270	"	50	68	200/2		
240	G. Cain	1963	6	3	104	"	50	28			
241	C. Williams	1963	6	6	92	"	24	20	70/2	12	
242	I. Pepper	1962	6	1½	185	"	50	37			
243	Lake Neepaulin Land Corp.	1961	6	1	156	"	50	18			
244	R. Trapani	1965	6	2	145	"	50	23			
245	Lake Neepaulin Realty Co.	1959	6	50	125	"	50	14			
246	P. Ryan	1964	6	3	105	"	50	25			
247	J. Barton	1962	6	2	160	"	50	60			
248	L. VanIngen	1964	6	3	247	"	50	120			
249	A. Lange	1964	6	10	176	"	50	25	90/2		
250	L. Grossman	1964	6	3	196	"	50	73	160/2		
251	F. Galardi	1961	6	3	227	"	50	98			
252	R. Tepedino	1959	6	15	146	"	50	65	70		
253	M. Stebner	1958	6	2½	248	"	50	114			
254	C. Smith	1959	6	30	125	"	50	10	20		
255	J. Dzamba	1966	6	1	272	"	50	56	210/2		
256	J. Tribuzio	1966	6	2	248	"	50	63	210/2		
257	Lake Neepaulin Land Corp.	1962	6	4	114	"	50	52			
258	W. Degethoff	1961	6	1	339	"	50	115			
259	A. Giagnacoyo	1961	6	5	117	"	54	flows			
260	A. Anastasi	1961	6	5	146	"	50	30			
261	W. Opriske	1959	6	5	105	"	50	flows ½ gpm			
262	R. Sylvester	1959	6	1½	332	"	50	124			
263	P. Nigri	1955	6	15	68	"	28	5			
264	N. Costa	1959	6	1	250	"	50	115			
265	Lake Neepaulin Develop. & Bldr.	1955	6	20	75	"	27	8			
266	J. France	1956	6	5	82	"	14	18			
267	J. Stock	1960	6	20	131	"	50	34			
268	F. Johansen	1964	6	2	206	"	50	57			
269	E. Abatisr	1965	6	100	150	"	50	60	80/2		
270	L. LeBlanc	1964	6	7	134	"	50	60	100/2		
271	F. Cordasco	1964	6	4	268	"	50	100	200/2		
272	T. Caponigro	1964	6	4	157	"	50	25	100/2		
273	W. Heidepren	1959	6	4	166	"	50	45	120		
274	M. Walsh	1966	6	3	173	"	50	10	150/2		
275	T. Trehy	1966	6	4	197	"	50	50	150/2		
276	O. Jacobsen	1966	6	5	95	"	50	15	80/2		
277	J. Sudol	1966	6	5	349	"	50	20	80/2		
278	B. Sadowski	1958	6	1½	207	"	50	112			
279	H. Payan	1962	6	7	143	"	50	18			
280	P. Litrenta	1966	6	25	123	"	50	18	80/2		
281	V. Tita	1964	6	6	197	"	50	80	150/2		
282	M. Mohr	1962	6	4	115	"	52	5	90/2		
283	H. Bley	1964	6		258	"	50	5	220/2		
284	W. Hintz	1964	6	12	176	"	50	96	160/2		

WANTAGE TOWNSHIP (Including SUSSEX)

LAKE NEEPAULIN (228-300)

Well No.	Owner	Year Drilled	Cas. dia. (in.)	Yield (gpm)	Depth (ft.)	FORMATION	Screen Setting or depth csd. (ft.)	Static Water Level (ft.)	Pumping Level/hrs. Pumped	Depth to Bedrock	USE
285	S. Paulter	1965	6	50	73	Omb	50	10	60/2		
286	R. Woodhull	1964	6	7	166	"	50	78			
287	E. Porto	1963	6	5	104	"	50	45			
288	L. VanHouten	1963	6	20	104	"	50	18			
289	W. Herlihy	1962	6	15	84	"	50	18			
290	S. Barbieri	1958	6	4	207	"	50	142			
291	R. Breen	1964	6	1	448	"	32	58	350/2		
292	G. McManus	1960	6	20	105	"	50	9	80		
293	S. Parcase	1962	6	2	165	"	50	10			
294	P. Ablequest	1964	6	7	105	"	50	20	90/2		
295	G. Panico	1963	6	15	125	"	50	8			
296	J. Kramer & R. Sihksnel	1962	6	5	145	"	50	38			
297	B. Lamberechts	1960	6	1½	167	"	50	47			
298	H. Rome	1964	6	8	100	"	88	32			
299	N. Cerrito	1964	6	15	238	"	15	15	105/2		
300	Lake Neepaulin Constr. Co.	1966	6	9	73	"	50	27	60/2		

Drillers' Logs of Wells, Wantage Township
(Depths below land surface are given in feet)

Well #	Depth	Log	Formation
3	0-49	Hardpan	
	-104	Gray rock	Omb
4	0-58	Hardpan and boulders	
	-122	Gray rock	Omb
5	0-76	Hardpan and boulders	
	-112	Gray rock	Omb
6	0-20	Hardpan	
	-85	Slate rock	Omb
7	0-106	Blue clay	
	-181	Slate	Omb
8	0-17	Hardpan	
	-47	Hard slate	Omb
11	0-8	Soil, hardpan and gravel	
	-210	Slate	Omb
15	0-30	Clay	
	-102	Shale	Omb
16	0-5	Soil	
	-346	Slate	Omb
22	0-36	Sand and gravel	Qsd
23	0-52	Clay and gravel	
	-220	Slate	Omb
24	0-54	Clay and gravel	
	-120	Slate	Omb
47A	0-20	Hardpan and boulders	
	-30	Boulders, gravel and water	
	-34	Gravel, sand and water	
	-100	Blue shale rock	Omb
	-152	Hard, gray rock	
	-186	Blue shale	
	-205	A soft, brown sandstone	
62	0-40	Sandy clay	
	-60	Shale	Omb
82	0-12	Hardpan and broken-up rock	
	-25	Hard, black rock	Omb
	-72	Black shale rock	
105	0-25	Hardpan and large boulders	
	-35	Boulders, gravel and water	
	-58	Blue clay	
	-65	Broken-up rock	
	-100	Blue shale rock	Omb
	-125	Hard, gray rock	
	-142	Soft, brown, "honey comb" rock	
112	0-12	Hardpan	
	-125	Blue shale rock	Omb
	-200	Gray rock, hard	
	-300	Blue shale rock	
	-443	Gray rock, hard	
	-580	Blue shale rock	
	-650	Gray rock, hard	
	-698	Blue shale rock	
119	0-17	Sandy overburden	
	-155	Shale rock	Omb
131	0-12	Hardpan	
	-48	Clay	
	-216	Blue limestone	Cok
144	0-12	Hardpan and clay	
	-100	Slate and blue stone	Omb
145	0-50	Hardpan and boulders	
	-75	Blue clay, boulders and gravel	
	-125	Blue clay, gravel and water	
	-150	Blue clay and boulders	
	-162	Boulders	
	-170	Blue clay and broken-up rock	
	-200	Blue shale rock	Omb
	-222	Hard, gray rock	
	-278	Blue shale rock	
150	0-9	Overburden	
	-335	Blue stone and slate	Omb
169	0-5	Earth and clay	
	-833	Gray slate rock	Omb

REFERENCE NO. 11

BCC: L. Ryder
D. Kovach
J. Ragsdale
D. Lehman

AMES
RUBBER CORPORATION
Excellence Through Total Quality

HEADQUARTERS
Ames Boulevard
Hamburg, New Jersey 07419
201-827-9101
FAX 201-827-8893

MIDWEST OFFICE
2537 Curtiss Street
Downers Grove, Illinois 60515
708-964-2440

July 20, 1992

Mr. Steve Urbanik
NJ Department of Environmental Protection
and Energy
Division of Water Resources
Bureau of Groundwater Quality Management
401 East State Street
CN 028
Trenton, NJ 08625

Re: Ames Rubber Corporation - Wantage Facility
NJPDES DGW Permit NJ0098639
Wantage Township, Sussex County

Dear Mr. Urbanik:

This will serve to confirm our telephone conversation of this date. The Department's letter dated July 13, 1992 constitutes the NJDEPE's final selection of the remedial action alternative for the referenced site. In accordance with Para. 23 of the ACO dated August 23, 1988, Ames shall submit to NJDEPE a detailed draft remedial action plan within the specified timeframe.

As we discussed, production well PW 3 is intended to be used as a back-up source only, upon completion of the groundwater treatment system. Treated groundwater will meet all of our routine process water requirements. Therefore, treatment of the water from PW 3 is not required at this time.

Thank you very much for your assistance and timely response. If you have any questions, please feel free to call.

Sincerely,

AMES RUBBER CORPORATION

Joseph R. Douglass
Director of Regulatory Affairs

JRD:kc

REFERENCE NO. 12

Let's protect our earth

-55-7-9

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.
DEPUTY DIRECTOF

IN THE MATTER OF	:	ADMINISTRATIVE
AMES RUBBER CORPORATION	:	CONSENT
WANTAGE TOWNSHIP,	:	ORDER
SUSSEX COUNTY	:	

This Administrative Consent Order is entered into pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "NJDEP") by N.J.S.A. 13:1DA-1 et seq., and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and duly delegated to the Assistant Director of Enforcement of the Division of Water Resources pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. Ames Rubber Corporation (hereinafter "Ames Rubber") owns and operates a manufacturing facility (hereinafter "site") located in Wantage Township, Sussex County (Block 7; Lot 8 of the Township of Wantage Tax Map). At this site Ames Rubber manufactures automobile suspension boots and custom elastomeric coated metal products for the office and copying industries (SIC Code 3069).

2. The site is underlain by the Allentown Formation, a dolomitic rock (magnesian limestone). The dissolution of the limestone can produce rocks of high permeabilities and therefore wells of high yield.

3. In its operations, Ames Rubber uses various solvents, including 1,1,1 trichloroethane, methylene chloride and methyl ethyl ketone.

4. On or about July 12, 1984, Ames Rubber sampled one of the facility's two potable water supply wells. The results of the sampling indicated that the ground water under the site was contaminated with pollutants as defined by N.J.S.A. 58:10A-13, including but not limited to 44 parts per billion (ppb) of 1,1 dichloroethane, 65 ppb of 1,1 dichloroethylene and 580 ppb of 1,1,1

trichloroethane, to a depth of 300 feet (the depth of the potable well). The second potable well, 96 feet deep, was subsequently sampled and the results indicated that it contained 34 ppb of 1,1 dichloroethane, 98 ppb of 1,1 dichloroethylene, and 1100 ppb of 1,1,1 - trichloroethane. These pollutants were discharged into the ground water in violation of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

5. Results of analyses dated November 29, 1984 indicated that a private potable well approximately 150 feet northeast of the site was contaminated with 360 ppb of 1,1,1 trichloroethane. Ames Rubber has provided bottled water to the household serviced by the well as an alternate source of potable water.

6. By letter dated February 20, 1985, Ames Rubber informed NJDEP that the company intended to retain the services of Lion Technology, Inc. as a consultant to delineate the extent of groundwater pollution and to make recommendations to Ames Rubber on ways of mitigating or eliminating the problems.

7. On August 1, 1985 Ames Rubber submitted a report entitled Phase 1, Site Investigation at the Ames Rubber Corporation, Plants 2 and 3, Wantage, New Jersey. The report included a proposal to conduct an investigation to determine the source(s), areal extent, and nature of the ground-water and surface-water contamination. The proposed investigation included the collection and analysis of ground-water and surface-water samples from the site. The objective of the Phase I investigation was to evaluate the degree of risk posed to human health and the environment by conditions at the site for the purpose of developing acceptable mitigation measures.

8. By letter dated December 21, 1985, NJDEP approved Ames Rubber's Phase I investigation submitted to NJDEP as an interim proposal subject to certain conditions. NJDEP's letter also informed Ames Rubber that the company would receive from NJDEP an Administrative Consent Order for execution. The Administrative Consent Order would contain, among other items, additional requirements for the investigation and cleanup of the site.

9. On May 2, 1985, Ames Rubber submitted a complete NJPDES/DSW permit application for a surface water discharge permit for outfalls D001 and D002.

10. Based on these FINDINGS, NJDEP has determined that Ames Rubber has violated the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., specifically N.J.S.A. 58:10A-6, and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A-1 et seq., specifically N.J.A.C. 7:14A-1.2(c), by discharging pollutants into waters of the State or onto lands or into wells from which it might flow or drain into said waters without a valid NJPDES permit.

11. To determine the nature and extent of the problem presented by the discharge of pollutants at the site and to develop environmentally sound remedial actions, it is necessary to conduct a remedial investigation and feasibility study of remedial action

alternatives (hereinafter "RI/FS") for the site. To correct the problems presented by the discharge, it may be necessary to implement a remedial action plan.

12. To resolve this matter without the necessity for litigation, Ames Rubber has agreed to conduct an RI/FS and to implement the remedial action alternative selected by NJDEP should a remedial action plan be necessary to remedy all pollution at and/or emanating from the site. Nothing in this Administrative Consent Order shall be construed in any manner as an admission of any fact or liability by Ames Rubber.

ORDER

NOW THEREFORE IT IS HEREBY ORDERED AND AGREED THAT:

I. Remedial Investigation and Cleanup

A. Remedial Investigation

13. Ames Rubber shall conduct the remedial investigation in accordance with the RI Work Plan and the schedule therein dated September 30, 1987 and as appropriately modified and approved by NJDEP's letter of December 9, 1987.

14. Ames Rubber shall submit to NJDEP a draft Remedial Investigation Report (hereinafter "RI Report") in accordance with Appendix A.

15. If upon review of the draft RI Report NJDEP determines that additional remedial investigation is required, Ames Rubber shall conduct additional remedial investigation as directed by NJDEP and submit a second draft RI Report.

16. Within thirty (30) calendar days after receipt of NJDEP's written comments on the draft or second draft (if applicable pursuant to the preceding paragraph) RI Report, Ames Rubber shall modify the draft or second draft RI Report to conform to NJDEP's comments and shall submit the modified RI Report to NJDEP. The determination as to whether or not the modified RI Report, as resubmitted, conforms with NJDEP's comments shall be made solely by NJDEP.

B. Feasibility Study

17. Within sixty-five (65) calendar days after receipt of NJDEP's written final approval of the RI Report, Ames Rubber shall submit to NJDEP a draft Feasibility Study Work Plan (hereinafter, "FS Work Plan") in accordance with the scope of work set forth in Appendix B which is attached hereto and made a part hereof.

18. Within thirty (30) calendar days after receipt of NJDEP's written comments on the draft FS Work Plan, Ames Rubber shall modify the draft FS Work Plan to conform to NJDEP's comments and shall submit the modified FS Work Plan to NJDEP. The determination as to whether or not the modified FS Work Plan, as resubmitted, conforms to NJDEP's comments shall be made solely by NJDEP.

19. Upon receipt of NJDEP's written final approval of the FS Work Plan, Ames Rubber shall conduct the feasibility study in accordance with the approved FS Work Plan and the schedule therein.

20. Ames Rubber shall submit to NJDEP a draft Feasibility Study Report (hereinafter "FS Report") in accordance with Appendix B and the approved FS Work Plan and the schedule therein.

21. Within thirty (30) calendar days after receipt of NJDEP's written comments on the draft FS Report, Ames Rubber shall modify the draft FS Report to conform to NJDEP's comments and shall submit the modified FS Report to NJDEP. The determination as to whether or not the modified FS Report, as resubmitted, conforms to NJDEP's comments shall be made solely by NJDEP.

C. Remedial Action

22. NJDEP will make the final selection of the remedial action alternative.

23. Within sixty (60) calendar days after receipt of NJDEP's written notification of selection of a remedial action alternative, Ames Rubber shall submit to NJDEP a detailed draft Remedial Action Plan in accordance with the scope of work set forth in Appendix C which is attached hereto and made a part hereof.

24. Within thirty (30) calendar days after receipt of NJDEP's written comments on the draft Remedial Action Plan, Ames Rubber shall modify the draft Remedial Action Plan to conform to NJDEP's comments and shall submit the modified Remedial Action Plan to NJDEP. The determination as to whether or not the modified Remedial Action Plan, as resubmitted, conforms to NJDEP's comments shall be made solely by NJDEP.

25. Upon receipt of NJDEP's written final approval of the Remedial Action Plan, Ames Rubber shall implement the approved Remedial Action Plan in accordance with the schedule therein.

D. Additional Remedial Investigation and Remediation

26. If NJDEP determines at any time prior to the termination of this Administrative Consent Order that additional remedial investigation and/or remediation is required to protect human health or the environment, Ames Rubber shall conduct such additional activities as directed by NJDEP. Any actions taken by NJDEP pursuant to this paragraph shall not be unreasonable, arbitrary, or capricious.

E. Progress Reports

27. Ames Rubber shall submit to NJDEP quarterly progress reports; the quarters being January through March, April through June, July through September, and October through December of each calendar year. Each progress report shall be submitted on or before the 30th day of the month following the quarter being reported. The first progress report shall be due to NJDEP on or before the

thirtieth (30th) day of the month following the first full quarter as indicated above. Each progress report shall detail the status of Ames Rubber's compliance with this Administrative Consent Order and shall include the following:

a. Identification of site and reference to this Administrative Consent Order;

b. Status of work at the site and progress to date;

c. Difficulties or problems encountered during the reporting period;

d. Actions taken or to be taken to rectify difficulties or problems;

e. Activities planned for the next reporting period;

f. Required and actual completion dates for each item required by this Administrative Consent Order;

g. An explanation of any noncompliance with the approved work plan(s), Remedial Action Plan or schedule(s);

h. All data collected, including quality assurance evaluations with supporting documentation, and field observations;

i. A discussion of performance evaluation of all remedial measures implemented to date.

II. Permits

28. This Administrative Consent Order shall not relieve Ames Rubber from obtaining and complying with all applicable Federal, State, and local permits, as well as all applicable statutes and regulations while carrying out the obligations imposed by this Administrative Consent Order.

29. Within forty-nine (49) calendar days after the effective date of this Administrative Consent Order, Ames Rubber shall apply for all necessary Federal, State and local permits for existing activities and, where applicable, former activities, in accordance with the requirements of N.J.A.C. 7:14A-1 et seq., N.J.A.C. 7:26-1 et seq., and N.J.A.C. 7:27-8, and other applicable statutes and regulations.

30. Ames Rubber shall submit complete applications for all Federal, State and local permits required to carry out the obligations of this Administrative Consent Order in accordance with the preceeding paragraph and the approved time schedules.

31. Within twenty-eight (28) calendar days of receipt of written comments concerning any permit application to a Federal, State or local agency, or sooner if required by the permitting agency, Ames Rubber shall modify the permit application to conform to the

agency's comments and resubmit the permit application to the agency. The determination as to whether or not the permit application, as resubmitted, conforms with the agency's comments shall be made solely by the agency.

32. This Administrative Consent Order shall not preclude NJDEP from requiring that Ames Rubber apply for any permit or permit modification issued by NJDEP under the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and/or any other statutory authority for the matters covered herein. The terms and conditions of any such permit shall not be preempted by the terms and conditions of this Administrative Consent Order even if the terms and conditions of any such permit are more stringent than the terms and conditions of this Administrative Consent Order. To the extent that the terms and conditions of any such permit or permit modifications are consistent with the terms and conditions of this Administrative Consent Order, Ames Rubber waives its right to contest such terms and conditions in any future permit or permit modification proceeding.

III. Project Coordination

33. Ames Rubber shall submit to NJDEP all documents required by this Administrative Consent Order, including correspondence relating to force majeure issues, by certified mail, return receipt requested or by hand delivery with an acknowledgement of receipt form for NJDEP's signature. The date that NJDEP executes the receipt or acknowledgement will be the date NJDEP uses to determine Ames Rubber's compliance with the requirements of this Administrative Consent Order and the applicability of stipulated penalties. NJDEP will exercise due dilligence in executing the documents.

34. Within seven (7) calendar days after the effective date of this Administrative Consent Order, Ames Rubber shall submit to NJDEP the name, title, address and telephone number of the individual who will be NJDEP's contact with Ames Rubber for all matters concerning this Administrative Consent Order. Ames Rubber shall contact the individual identified in the following paragraph for all matters concerning this Administrative Consent Order.

35. Ames Rubber shall notify NJDEP two weeks prior to the initiation of all field activities.

36. Ames Rubber shall submit three (3) copies of all documents required by this Administrative Consent Order to:

Joseph M. Mikulka, Chief
Northern Bureau of Regional Enforcement
Division of Water Resources
1259 Route 46 East - Building 2
Parsippany, New Jersey 07054

and shall submit one (1) copy of all documents to:

Stephen Johnson, Chief
Bureau of Ground Water Discharge Control
Division of Water Resources
401 East State Street, CN-029
Trenton, New Jersey 08625

IV. Financial Requirements

A. Financial Assurance

37. Within twenty-one (21) calendar days after the effective date of this Administrative Consent Order, Ames Rubber shall submit to NJDEP a proposed irrevocable letter of credit which meets the following requirements:

    a. Is identical to the wording specified in Appendix D which is attached hereto and made a part hereof;

    b. Is issued for one year and in the event that the issuing bank or financial institution is subject to Title 17 of the Revised Statutes of New Jersey, shall not be automatically renewable but shall be renewable upon reapplication and review only;

    c. Is issued by a New Jersey State or Federally chartered bank, savings bank, or savings and loan association which has its principal office in New Jersey.

38. Within twenty-one (21) calendar days after the effective date of this Administrative Consent Order, Ames Rubber shall submit to NJDEP a proposed irrevocable standby trust fund agreement which meets the following requirements:

    a. Is identical to the wording specified in Appendix E which is attached hereto and made a part hereof;

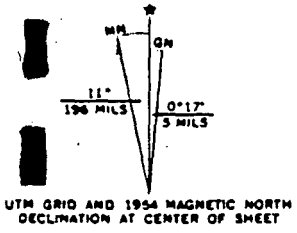
    b. The irrevocable standby trust fund shall be the depository for all funds paid pursuant to a draft by NJDEP against the letter of credit;

    c. The trustee shall be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or New Jersey agency;

    d. Is accompanied by a certification of acknowledgement that is identical to the wording specified in Appendix E.

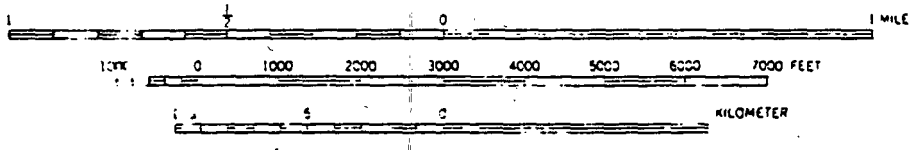
39. Within fourteen (14) calendar days after receipt of NJDEP's written comments on the proposed letter of credit, the proposed trust agreement, and the proposed certification of acknowledgement, Ames Rubber shall modify the documents to conform to NJDEP's comments and resubmit them to NJDEP.

REFERENCE NO. 13



UTM GRID AND 1954 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000



CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

QUADRANGLE LOCATION

RECONNAISSANCE MAP OF THE GLACIAL GEOLOGY OF THE HAMBURG QUADRANGLE, NEW JERSEY

By

Scott D. Stanford and David P. Harper

1985

JERSEY
Governor
IENTAL PROTECTION
ommissioner
RESOURCES
.E., Director

DESCRIPTION OF MAP UNITS

UNIT	SUBUNIT	MAP SYMBOL	MATERIAL	LANDFORM AND OCCURRENCE	GROUND WATER POTENTIAL
till	discontinuous till	td	Unstratified and unsorted boulders and gravel in a matrix of mixed sand, silt, and clay. Deposited directly from ice. Matrix is generally sandier on uplands than in valleys.	Patches of till resting directly on bedrock. Deposits are up to 100 feet thick, but thickness varies considerably within short distances. In valleys, till may be encountered in the subsurface beneath stratified sediment or lake-bottom sediment.	Deposits of till are generally poor aquifers because they are comparatively impermeable and thin. Sandy tills in valley bottoms may, in places, provide domestic water supplies.
	continuous till	tc	As above.	Continuous blanket of till covering the bedrock surface. Thickness generally is greater than ten feet and ranges up to 100 feet. In valleys, till may be encountered in the subsurface beneath stratified sediment or lake-bottom sediment.	As above.
stratified sediment	ice-marginal stratified sediment	im	Stratified sand and gravel. Sorting generally is good and stratification generally is continuous and undeformed.	Broad, flat-topped delta ridges that extend across valleys. Deposits are up to 200 feet thick, but thickness varies greatly within short distances due to irregularities of the bedrock surface.	Stratified sediment in valley bott is the most productive glacial aqui because it is generally permeable, thick, continuous, and extensive. Deposits in hills, ridges, or terra above the valley bottom are less pr ductive because they drain rapidly, *although they may act as important* recharge areas for the valley-bott deposits. Reported yields of well in Wantage, Vernon, and Hardyston Townships tapping these deposits range from 3.5 to 45 gpm (median o 18 gpm) for 21 domestic wells and from 50 to 942 gpm (median of 213 gpm) for 10 industrial wells (Mill 1971). Depths range from 51 to 21 feet and average 98 feet.
	ice-contact stratified sediment	ic	Chiefly stratified sand and gravel. Sorting generally is poorer than that of ice-marginal stratified sediment. Stratification is less continuous and is commonly deformed. Sediment flow deposits and till, consisting of mixed gravel, silt, and clay, are interlayered with the sand and gravel in places.	Eskers and hummocky terraces generally located within valleys. May be present in the subsurface interbedded with and underlying lake-bottom sediment. Deposits are up to 200 feet thick, but thickness varies greatly over short distances due to topographic irregularities and irregularities of the bedrock surface.	As above.
lake-bottom sediment		lb	Thinly-layered clay, silt, and fine sand. In places, lake-bottom sediment is overlain by up to 25 feet of alluvium and peat.	Flat, low-lying areas in valleys, commonly occupied by wetlands. Deposits generally are less than 50 feet thick but may be up to 150 feet thick.	Lake-bottom sediment is generally poor aquifer because it is compara tively impermeable. However, in Vernon Valley and in the Wallkill valley near Hamburg, lake-bottom sediment is interbedded and underl by up to 40 feet of water-producin stratified sediment.

RECONNAISSANCE MAP OF THE GLACIAL GEOLOGY OF HAMBURG QUADRANGLE, NEW JERSEY
GEOLOGIC MAP SERIES 85-1

MAP SYMBOLS

Contact, approximately located

Glacial lake spillway, showing direction of drainage and approximate elevation of spillway (ft.)

Meltwater channel, showing direction of flow

Glacier margin
(Ticks point toward glacier; dashed where uncertain.)

Esker

Drumlin, primarily glacial sediment
(Axis parallel to ice flow.)

Drumlin, primarily bedrock
(Axis parallel to ice flow.)

Striation, showing direction of ice flow
(Dot marks point of observation.)

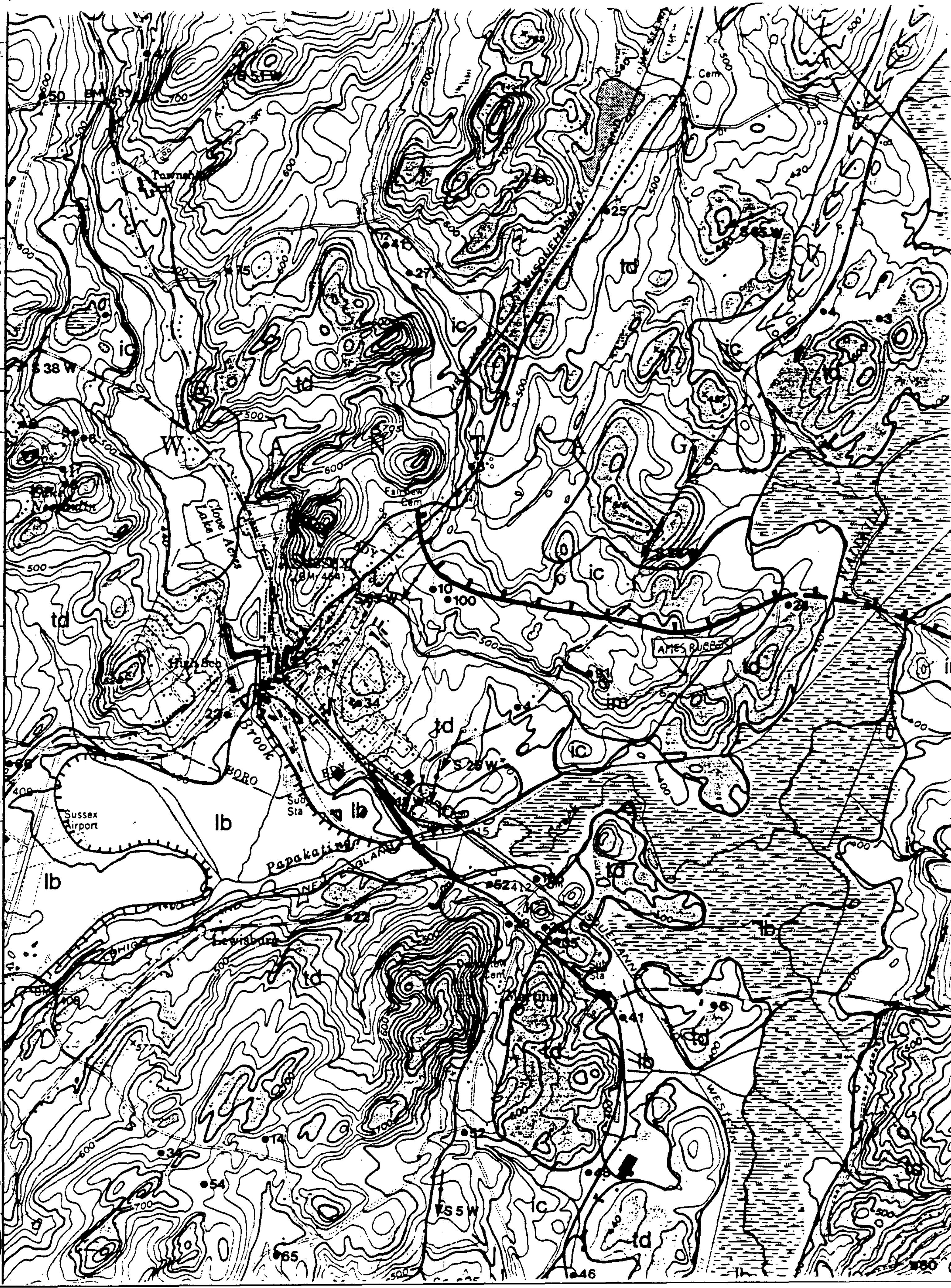
Stream-cut scarp within map unit

Water well or test boring reaching bedrock, showing depth to bedrock (ft.), thickness of overlying post-glacial sediment (ft.) in italics above dot, and thickness of underlying weathered bedrock (ft.) in italics below dot, inferred from driller's logs of variable reliability

Water well or test boring not reaching bedrock, showing minimum depth to bedrock (ft.) and thickness of overlying post-glacial sediment (ft.) in italics above dot, inferred from driller's logs of variable reliability

Glacial lake level (ft.) (Section BB' only.)

Numerous bedrock exposures



LIBERTYVILLE 2.2 MI
S 38 W
S 28 W
S 5 W
Clove Lake
Fairview Cem
SUSSEX (BM 454)
High Sch
AMES RUBBER
Sussex Airport
Sub Sta
Papakating
Lewisburg
BORO
td
ic
lb

REFERENCE NO. 14

RAI MEMORANDUM OF TELEPHONE CONVERSATION

PROJECT # A4020-200-05-40A DATE 8/10/12 TIME 2:00 PM

PROJECT NAME ARCS II Ames Rubber PA

BETWEEN Sastri Vadavalli, RAI AND Mr. Keith Arneson, meteorologist

FIRM NJDEPE

ADDRESS Trenton NJ

TEL. NUMBER (609) 292-0424

CALL PLACED BY: ☒ RAI

☐ OTHER PARTY

SUBJECT Precipitation Data

DISCUSSED Sastri called to obtain county annual precipitation data.

For Sussex County, average rainfall = 45.39 inches at Sussex

= 44.03 in at Newton

Newton is selected as county seat, so we will use 44 inches per year.

☐ NEEDS FOLLOW-UP

R. Opern

SIGNATURE

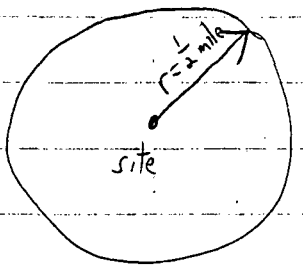
g:\misc\teleform

REFERENCE NO. 15

(1)

Acreage Calculations

Wetlands with 1/2 mile of site



Based on USGS Topo map (Hamburg), it is estimated that $\frac{1}{5}$ of the area within the 1/2 mile radius "ring" is wetland area.

$\frac{1}{2}$ mile = $\frac{1}{2}(5{,}280 \text{ ft.})$ = 2640 ft.

A = Area of $\frac{1}{2}$ mile ring = $\pi(2640 \text{ ft.})^2$ = 21,895,644 ft.^{2}

Since 1 acre = 43,560 ft.^{2}, $A = \frac{21{,}895{,}644 \text{ ft.}^2}{43{,}560 \text{ ft.}^2/\text{acre}}$ = 502.7 acres

Assuming $\frac{1}{5}$ of the area to be wetlands (a fairly high estimate);

the wetlands area = (.20)(502.7 acres)

= **100.5 acres**

Richard Ogem, R&T

8-16-92

REFERENCE NO. 16

(1)

RAI MEMORANDUM OF TELEPHONE CONVERSATION

PROJECT NUMBER A-9020-001 DATE 8/18/92 TIME 1:20 p.m.

PROJECT NAME EBASCO PAs

BETWEEN Alan Sapp AND Daniel Van Abs, Ph.D.

FIRM NJDEPE Wellhead Protection Program ADDRESS Trenton NJ

TELEPHONE NUMBER 609/633-1179 (Regional Water Supply Planning)

CALL PLACED BY: [X] RAI

[ ] OTHER PARTY

SUBJECT Definition of a wellhead protection area.

DISCUSSED The Wellhead Protection (WP) Program is a Federally overseen, state-run program. Currently, New Jersey have an approved plan and set of delineation regulations, but no delineated WP areas.

The WP program is defined under the Safe Drinking Water Act, and is designed to protect groundwater flowing into public water wells.

The criteria used for delineation are based on water travel time. The outer limit of the WP area is at the point where it would take GW 12 years to reach the well, based on GW modelling.

Another definition is 2000 feet around a well.

This applies only to public water supplies, not private wells.

[ ] NEED FOLLOW-UP

Alan h. Sapp
SIGNATURE

END